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The American Osteopathic Academy of Orthopedics

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President's Address

HARRY F. SCHAFFER, D.O.
Detroit

Ten short years ago this Academy was formed by a few men in the Detroit area who felt that the osteopathic school of medicine should have an organization for the advancement of osteopathic orthopedics. It became my lot to serve this organization as its first program chairman.

At the conclusion of the first 3-day meeting this group elected their first officers and directors to serve for the coming year. There was such an enthusiastic response to the need for such meetings that the members present demanded similar programs for the ensuing year. This was the beginning of the organization now known as the American Osteopathic Academy of Orthopedics.

As the years passed the Academy was fortunate in securing conscientious and competent leaders, as the record will show. This holds especially true for the office of secretary which has been so ably filled all through the years by J. Paul Leonard. Dr. Leonard not only has carried the load of this most important office but he has been a guiding influence in the continued success of the Academy. Of the original charter members, twelve are active at the present time. They are: Harold E. Clybourne, Columbus, Ohio; Bertram E. Crase, Battle Creek, Michigan; W. E. Darling, Detroit; James M. Eaton, Philadelphia; J. Paul Leonard, Detroit; John W. Mulford, Cincinnati; Leonard C. Nagel, Cleveland; Wallace M. Pearson, Kirksville, Missouri; George S. Rothmeyer, St. Petersburg, Florida; Harry F. Schaffer, Detroit; C. Robert Starks, Denver; and John P. Wood, Birmingham, Michigan.

We, as osteopathic physicians, should be better qualified to handle orthopedic problems than old-school physicians because osteopathic medicine is based upon the integrity of body mechanism as the prime con-

sideration for health. Certainly orthopedics should be a greater challenge to us as we witness daily in our practice the mishandling of simple orthopedic problems under old-school thinking. Richard N. MacBain, President of Chicago College of Osteopathy, will further emphasize the osteopathic concept as applied to orthopedics.

The Academy is now incorporated in the State of Michigan. Under new Bylaws adopted at the last meeting in Des Moines, Iowa, it is now possible to broaden its scope of development to include nonsurgical as well as surgical orthopedics. I would like to emphasize the need for further development in the field of nonsurgical orthopedics. Old-school orthopedists are attempting to cover this field by what they term physical medicine, but this academy should be the leading influence in the development of nonsurgical orthopedics. Wallace Pearson has made some noteworthy efforts in this direction. I am anxious to see other men come forth to further substantiate the principles of osteopathy as applied to nonsurgical orthopedics.

Although our membership has never been large, it has been outstanding in quality as measured by professional attainment. New members are badly needed at this stage of our development; however, growth must never be at the expense of high standards. New members must be carefully screened regardless of the type of orthopedics in which they are interested. Under Section 5 of Article 3, our Bylaws give us the opportunity to establish recognized training programs in orthopedics. By developing these programs in our hospitals we can stimulate interest in the field of orthopedics among interns and residents.

We are now beginning our second decade of organization with greater ambitions and higher goals than in the first. It was natural that the first years should be wrought with struggle and insecurity from time to time; however, I can say without hesitation that we laid the foundation then for the strong and more professionally developed organization of today. This came about only because each member applied himself more diligently and was willing to share knowledge with others at such meetings as this. At this time I would like to make an earnest appeal, especially to the younger men of this organization: If you feel that you have newer and better methods of handling orthopedic problems, seek out the program chairman and offer to take an assignment on the program.

As President of this Academy I wish at this time to extend my sincere thanks to the other officers, to the members of the board, and to the committee chairmen. I have had complete cooperation throughout the year and what success has been attained is due entirely to their efforts and the cooperation of the membership at large.

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The Application of Osteopathic Therapy in Orthopedics

R. N. MacBAIN, D.O.
President, Chicago College of Osteopathy
Chicago

A general practitioner of osteopathic medicine appreciates the opportunity of appearing before a specialty group, particularly the American Osteopathic Academy of Orthopedics.

Your field is closely allied to the whole basic osteopathic concept. You confine your attention chiefly to the skeletal tissues and that is where the emphasis rests in osteopathic philosophy. It is the special consideration which osteopathy gives to the skeletal or somatic components of the disease process that distinguishes it from other schools of practice. And yet, with all their similarities, there is a great difference between the practice of osteopathic medicine and the practice of the specialty of orthopedics. Your program chairman has asked me to discuss with you briefly some areas in which the basic principles underlying osteopathic medicine and surgery can be applied to your specialty field so that the word osteopathic in the title of your College has substance and content.

When teaching osteopathic principles to students, we have found it convenient to discuss the role of osteopathic pathology or the Still lesion in two parts. The first part is the osteopathic lesion in relation to the skeletal tissues themselves, e.g., muscles, ligaments, nerves, joint structures, and the clinical conditions affecting those structures in which the lesion has an influence. This might be called the orthopedic phase of osteopathic medicine, a phase to which a number of people think osteopathy makes its greatest, some even its sole, contribution to the practice of medicine.

The other part of the presentation of principles concerns the relationship of osteopathic skeletal pathology to body function as a whole, to viscera, to the psyche, and to the general body economy. It is this recognition of the part that these skeletal pathologies play in all disease processes that makes osteopathy something more than a mere refinement in orthopedics, it is one of the factors which makes osteopathy a distinct school of practice. It is a distinct school of practice because it elevates the skeletal tissues (your field of specialization) to a place of greater importance and recognition than do other schools of practice. At the same time, it reaches far beyond the limitations of the definition of orthopedic surgery which says, "Orthopaedic Surgery is that branch of surgery especially concerned with the preservation and restoration of the functions of the skeletal system, its articulations and associated structures."[1]

There are a number of definitions of osteopathy. I venture one more because it helps to express the basic features of osteopathy in relation to the practice of modern medicine. "Osteopathy is that school of medicine which in diagnosis and therapy recognizes, among other components, the skeletal and somatic components of disease and emphasizes them."

The interrelationship of the skeletal and visceral tissues is a major consideration in osteopathy and the emphasis placed on this interrelationship is one of the distinctive features of our system of practice.

Before considering specific orthopedic applications of osteopathy, the relationship of all orthopedic con-

ditions to general body function should be pointed out. The official definition of orthopedics quoted above overlooks this relationship. To osteopathic orthopedists, trained as you are in the interrelationships of structure and function, dysfunctions and pathologies of the neuromusculoskeletal system are part of the unified response of the body to insult or injury and will be considered as such. We expect that an osteopathic orthopedist will give special attention to the constitutional factors in his cases. Attention to these factors is not mentioned in the standard definition although Guy A. Caldwell,[1] in his presidential address to the American Academy of Orthopaedic Surgeons, January 31, 1951, followed the definition with this statement: "By this definition, we staked a claim to a large field in the practice of medicine. This claim has been accepted in effect by such national organizations as the American Medical Association and the American College of Surgeons, and the general public is gradually beginning to recognize the types of disorders which we orthopedists should treat." He states further: "However, much remains to be accomplished before our claim is fully established, and always there will be overlapping, disputed areas at the periphery, when we may touch on the fields of general surgery, neurosurgery, plastic surgery, pediatrics, and the newly established specialty of physical medicine. . . . Thus, our position in relation to the claim we have staked indicates a need for liaison work. It appears that organized orthopaedic surgery needs to clarify its position, not only in the minds of the rest of the medical profession, but also in the minds of the people who are, will be, or should be, our patients."

Caldwell[1] goes on to discuss problems of ethics, training, and public relations in a way that is most stimulating and I believe valuable for all physicians—not only those of your specialty. He is concerned with broadening the field of orthopedics in medicine. I have just pointed out above that orthopedic surgeons, osteopathically trained, are expected by their own profession and by their patients to practice in a broad field. I will not discuss the constitutional part of orthopedics further but confine my consideration to osteopathic therapy as it affects conditions primarily and principally skeletal in their origin and pathology.

Osteopathic diagnosis recognizes many conditions in skeletal tissues which are prepathologic or functional in nature. It recognizes them when they are most amenable to treatment, before degenerative tissue changes have become established. Osteopathic diagnosis is thus of great assistance in preserving the functions of the skeletal tissues.

By osteopathic diagnosis is meant the ability to detect by trained palpation muscular tensions, reflex spasticities, and slight or moderate impairment of joint mobility and function. Such findings may result in the detection of potential joint pathology long before any evidence of a gross nature—visual, palpatory, or radiographic—can be found. The searching evaluation of tissue states by palpation and testing for fine changes in mobility is the first important contribution of osteopathy to orthopedics.

The osteopathically trained physician and surgeon detects changed functional states in joints and attaches importance to these states and to pathological changes which are considered minor and of no particular clinical significance by nonosteopathic practitioners. Herein lies a marked difference in emphasis in osteopathic and old-school practice. Osteopathy stresses dynamic changes in tissue states, changes which because of tensions, pressures, hypermotility or hypomotility spasticity, et cetera, become foci of irritation. Consideration is given to the close relationship of the skeletal tissues to the central nervous system and the areas of hypersensitivity or chronic facilitation in the spinal cord, resulting from these functional changes in joints, become an important part of the pathological and clinical picture. Frequently this emphasis on the functional state of the joint and on dynamic tensions leads to a rationale of treatment different from the usual or standard forms. A positive treatment, usually including specific osteopathic manipulation to reduce these tensions in such a way that the normal anatomical relationships of all tissues including the osseous parts of an articulation are restored and maintained, is undertaken.

In contrast to this stress of the functional is what might be called the emphasis on the morphological or purely structural pathologies of joints. In this latter way of thinking, pathology which does not demonstrate morphological tissue changes is either not recognized or considered of no importance. This leads to treatment that is either directed toward altering structure through surgical intervention, to the opposite extreme—prolonged rest through immobilization, where tensions become quiescent only to re-appear when usual activity is resumed, or to another alternative—no treatment at all.

The two viewpoints discussed above are by no means absolute in either school of practice. The difference in emphasis is relative but sufficient to constitute a major variation in approach.

The field of traumatic injuries is a division of orthopedics in which osteopathic diagnosis and treatment have much to offer. It is in the minor, less dramatic injuries by force, whether acute force, chronic postural, or occupational force, that osteopathic diagnosis is helpful. Every osteopathic physician has been consulted many times concerning traumatic injuries which produced symptoms but which could not be demonstrated by any of the diagnostic methods available to the nonosteopathic orthopedists.

The limitation in diagnostic approach in old-school medicine carries over into therapy. The time-honored method employing rest and heat has proved inadequate with sufficient frequency to cause orthopedists, first in England and later in the United States, to question the scope of both their diagnosis and treatment. As a result there has developed the manipulative surgeon in medical orthopedics. He practices manipulative therapy with variable success, depending on his individual skill and training. To date, the old-school manipulative surgeon has not seriously challenged the field of osteopathic orthopedics.

In the immediate care of severe traumatic injuries, no particular difference in osteopathic orthopedics or old-school orthopedics can be observed. The care of fractures by both surgical and nonsurgical reductions and the management of dislocations and tearing of ligaments or muscles requires surgical judgment and technic of high skill, common to qualified specialists in both schools of practice. But the majority of traumatic injuries needing care are not of the major surgical type. For the therapy of these nonsurgical traumatic injuries not only the osteopathic orthopedist

but also the general practitioner of osteopathic medicine is particularly well qualified and successful. In fact, the reputation of osteopathy in this field is such that to many laymen the care of such injuries is *the* field of osteopathy and to some, the whole field. For many years, certain old-school practitioners have been willing to grant us recognition in that field and wishfully would like to confine us there. We even have to be on guard that we ourselves do not confine osteopathic structural therapy to the orthopedic phase.

Osteopathic corrective manipulative treatment contributes to the care of traumatic injuries a therapy which, when indicated and required, cannot be replaced by heat, by traction, by bed rest, by immobilization, or by nonspecific measures of physical medicine. This therapy consists of specifically directed, nontraumatic force applied to a joint in such a way that the particular tensions in soft tissues which restrain joint function will be reduced or overcome. This is known as specific corrective technic or bony lesion technic. The latter term is not well chosen. The limitation of function in the joint may or may not result in a change from the normal relationships of the bones forming the joint. If there is a change in positional relationships, technic properly applied by relieving the maintaining tensions in muscles, ligaments, and capsules will tend to restore normal relationships. The corrective changes occurring in the relations of the bones of a joint are incidental to the release of tension in the supporting tissues.

General articulation of joints, particularly the less freely movable spinal and pelvic articulations, will not release the usually unequal and unilateral tensions occurring as a result of injury. Accumulated force, carefully and specifically applied, is necessary. The method is akin to the type and sequence of force applied in the reduction of a fracture or a dislocation only on a lesser scale. Judgment must be exercised to determine the indications and contraindications of this type of treatment. It is not used in cases where fractures have not been ruled out or where immobilization may be the primary treatment. But at some stage in the recovery process, treatment to specific tensions in the periarticular tissues is indicated to speed recovery and to insure complete restoration of function.

Just as early manipulation and functional use of fractured joints, particularly of the extremities, is today considered necessary to secure good joint function, so early manipulation and functional use of any traumatized joint should begin as soon as sound judgment indicates. While old-school methods in orthopedics are changing rapidly, sound osteopathic judgment in dealing with traumatic injuries—other than fractures—still differs from sound judgment among the nonosteopathically trained surgeons.

In the traumatic injuries, attention is frequently confined to the major and most evident injury, usually a fracture, while accompanying, often related but less severe injuries are overlooked. Practically every force sufficient to break a bone or dislocate a joint in the extremities transmits an injurious force to the axial skeleton, producing traumatic tissue pathology in the cervicodorsal or the lumbosacropelvic articulations. Where measures to treat traumatized tissues are overlooked in the presence of a fracture or sprain, the secondary injuries persist and lead to many subsequent clinical problems. Osteopathic orthopedists, trained to think in terms of relationships and remote effects, should find these conditions at the time of injury and treat them as soon as practical. A fair percentage of new osteopathic patients consists of people who seek relief for conditions of this kind after care by nonosteopathic orthopedic surgeons. Each year we are increasingly impressed by the role of untreated or improperly treated trauma as an etiological factor in many disease states, not only in skeletal problems. These traumatic etiologies are often remote and frequently recalled with difficulty.

Osteopathic manipulative therapy offers a conservative approach to a number of orthopedic problems which without it would be treated with operative surgery, casts, long periods of bed rest, or immobilization. The recognition and manipulative treatment of the skeletal pathologies known as the Still lesion permit treatment that is simple and effective in a number of conditions which would otherwise require severe, prolonged, and frequently complicated measures.

The controversial problem of the herniated disk is a good example of the positive values of the application of osteopathic therapy to a common clinical condition, backache, and sciatica. It has been interesting to read the literature pertaining to disk pathology and its treatment. There is evidence of much uncertainty in diagnosis and treatment. Many nonosteopathic surgeons now recommend that conservative measures be fully used before surgery is recommended. Osteopathic corrective treatment is, in the experience of our profession, the one most effective therapy of all nonsurgical measures for disk pathology. It has prevented surgery in many cases.

Other areas in which osteopathic treatment can frequently bring relief and restore physiological balance in conditions which might otherwise be subject to surgery are coccygeal injuries, congenital weaknesses and anomalies of the lumbosacral region, cervical rib, shoulder girdle symptoms, and traumatic knee injuries, to mention the more common ones. Osteopathic manipulation markedly reduces the frequency with which surgical interference is necessary in the above groups.

The most common of the degenerative diseases of the skeletal system, arthritis, has many forms, diverse origins, and varied symptomatology. Osteopathic manipulative therapy is effective in some forms, palliative in others, and of little value in certain types. The results from osteopathic manipulation parallel the uncertainties, the unexpected successes at times, and the unexplained failures and disappointments that we have learned to expect from any single method of treatment applied to the inclusive group of clinical entities called arthritis.

Localized simple joint inflammation resulting from injury, that is, traumatic arthritis, is in general the most amenable to corrective manipulative treatment of all the arthritides. Here we are dealing with the osteopathic lesion in a severe form or in an advanced stage, where tissue changes are recognizable by standard methods of diagnosis. These changes include spur formation, fibrositic degeneration, and some absorption. While the tissue degeneration is seldom reversed by treatment, progression can be stopped, joint function can be restored so as to permit reasonable use, and pain and swelling can be relieved by manipulative measures which reduce tensions in supporting ligaments and muscles. The reduction of tensions improves circulation as well. Traumatic lesions complicated by

nonspecific infections are likewise amenable to manipulative therapy after the acute stage.

The degenerative changes in the spine which accompany the aging process, formerly called arthritis but more recently termed arthrosis, lessen the resiliency of the spinal joints. The susceptibility to trauma and strain is increased. The effects of osteopathic pathology are exaggerated. Specifically applied, nontraumatic corrective manipulative treatment is of marked value in these conditions. The tendency in nonosteopathic circles to attribute symptomatology to the degenerative changes themselves, rather than to sensitive response to stress and strain, has led to negativism in therapy. Many patients with arthrosis are proclaimed semi-invalids and told they will have to live with their symptoms although adequate therapy is available through osteopathic management.

In the collagen diseases, involving as they do metabolic, nutritional, and glandular relationships, manipulative therapy is essentially palliative and certainly not primary. It may form an important part of a multiple therapeutic approach and its use to relieve symptoms is frequently significant. In other degenerative diseases of the skeleton, in neoplasms, and in deformities, osteopathic manipulation as such is not a primary consideration.

There is a determination in the osteopathic profession today to re-examine and re-evaluate the basis of our science and to reappraise its values in the broad field of medicine. We, as osteopathic physicians and osteopathic specialists, practice in a medical climate or atmosphere distinctly different from that of the early 1900's or even the 1920's. Many of the philosophies peculiar to osteopathy then are generally accepted in medicine today. Our osteopathic philosophy does not always appear so radical or so different as it did in the past. The practices of the dominant school are more physiological, more skilled, and less drastic. Now osteopathy must progress, develop, and grow because of its positive values, rather than as a negation of the errors of those who choose to call us their competitors.

Osteopathy attributes to somatic or skeletal tissues a role in the disease process of much greater significance than do other schools of practice. It considers the response of the body to insult, injury, or disease a unified response, involving to some degree all tissues and functions. In the field of internal medicine, this requires of the osteopathic physician careful study and analysis of the somatic components of disease and their inclusion in all programs of diagnosis and treatment.

In orthopedics, this conception of unity requires that we consider altered function as well as deformities of structure as important. Treatment directed to functional changes can prevent or retard pathological progress. A greater emphasis on soft tissue injuries in trauma, as well as accompanying but less evident tissue insult in secondary areas, is important in our science. In some cases of structural irregularity, both in developmental anomalies and in acquired conditions, adequate treatment to establish functional compensation or adaptation forestalls the necessity for more drastic measures. The leadership which osteopathy has given in this field is slowly being followed by those of other fields of practice. The change in the dictionary definition of orthopedics within the last 5 years is significant. The 1947 (twenty-first) edition of Dorland's "American Illustrated Medical Dictionary" defined orthopedics as "that branch of surgery which deals with the correction of deformities and the treatment of chronic diseases of the joints and spine." The contrast between that and the 1951 (twenty-second edition) definition supplied by the American Board of Orthopedic Surgery with its "preservation and restoration of the functions of the skeletal system" marks an advance in thought and perspective. Will it be possible for you, as osteopathic orthopedists, by a better understanding of and concentration on those functional tissue states which have until the present been an osteopathic specialty, to maintain the leadership in your field that has been your heritage for decades?

5250 Ellis Ave.

REFERENCE

1. Caldwell, G. A.: Orthopaedic surgery today and tomorrow. J. Bone & Joint Surg. 33A:279-285, April 1951.

LOW-BACK AND SCIATIC PAIN

The question of whether or not disc excision should be accompanied by fusion cannot be answered by an unequivocal "yes" or "no." The more cogent arguments pro and con may be summarized as follows.

Those who favor simple disc excision argue that the patients are usually operated upon for severe sciatic pain. The relatively simple excision operation relieves this symptom in 90 per cent or more of the cases, and the few patients requiring re-exploration often have a second disc lesion. They note that most of the patients have been returned to their original occupation and that the result may be classified as good or excellent in 60 per cent or more of properly performed disc excisions. An occasional poor result may be due to mechanical instability of the spine, but it is impossible to recognize preoperatively or at the operating table the indications for fusion. It is, therefore, wiser to subject a few patients to a fusion operation at a later date than to subject many patients to a needlessly complicated original operation, with its attendant risks and prolonged after-care.

Those who favor the combined excision-fusion operation argue that a protruded disc, traumatic or degenerative, means loss of its normal elasticity, narrowing of the disc space, and articular facet changes, and that the involved segment can never be restored to anatomical or functional integrity. It is, therefore, better to stabilize it by fusion than to take the risk of an unsatisfactory result due to pain and limitation of physical activity. They point out that the *additional* operating time required to do the fusion is ordinarily less than forty-five minutes. The additional period of recumbency required of patients with the combined operation has been reduced to about ten days. Forty-five minutes of the surgeon's time and two weeks of the patient's time are a modest investment from which the patient may derive life-long benefit.—J. S. Barr, M.D., *Journal of Bone and Joint Surgery*, July 1951.

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Cervical Pain with Associated Brachial Neuritis or Neuralgia

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A frequent but perplexing problem is pain in the neck with or without radiation of pain into the upper extremities. This syndrome has been of interest to me for years, first, because of the failure of others to help the suffering individual and, second, because of my own shortcomings in giving the necessary relief. The complaint can vary from a simple stiff neck of a few hours' or days' duration to the violent, incapacitating distress with a frank brachial neuritis of months' duration.

In approaching this complaint with its variations I have found over the past few years certain constant findings and symptoms which have assisted me in suspecting the origin of the pain in respect to an accurate diagnosis. These so-called diagnostic points are not original by any means. They have been gleaned from the literature as well as from observations of my colleagues and from my own experience. The value of these factors in making a diagnosis is of importance; unfortunately, however, the value of each sign is not too strong in its own right and it is only when the sum total of the clinical findings are weighed that one may allow himself the benefit of a clinical impression.

CLASSIFICATION AND DIAGNOSIS

There is no true diagnostic pattern that can be used consistently since many of the syndromes present identical symptom pictures yet have an actual variation in the underlying disease process. I have found many similarities among symptom complexes common to different underlying diseases. This explains the variable results so common in cervical pain. Radical therapy with surgical intervention brings relief to one individual while at the same time another individual suffering what appears to be the same complaint is given rest and conservative management and he too has relief of his discomfort.

In the syndrome under discussion the radiation of pain to the arm is usually as important or even more important a part of the complaint than the pain in the neck. I believe these cervicobrachial pains can be divided into three groups:

The first group is that in which there is muscle tension or spasm in the cervical musculature with accompanying spasm in the deltoid or trapezius muscle on one or the other side. The muscle distress may be primary, due to myositis, or it may be secondary, due to an acute arthrodial reaction or an osteopathic lesion in the cervical arthrodiae. Muscle distress may also result from a neurologic entity arising from the brain or cord. There is no frank destructive or proliferative disease in the bone or joint structures. This group of pathologies produces pain in the neck, possible neuralgic pains in the extremities, but no true radicular syndrome.

The second group is that in which there is actual organic change in the cervical vertebrae in the form of destructive or productive disease involving primarily the bodies of the vertebrae with secondary changes in the intervertebral disk spaces ranging from obliteration due to collapse to variation caused by overlying bone change. This group would include the tumors of the bone in this site, degenerative disease of the cervical spine (osteoporosis), and tuberculosis of the cervical spine. Here is found the true radicular syndrome due to pressure on the nerve roots with accompanying paresthesia, atrophy, reflex changes, and muscle weakness. In the neck with this type of cervical pain there is actual muscle guarding as a defense mechanism.

This second group also includes congenital defects of the bone structure of the cervical spine. In my experience with such defects the complaint is mostly neck pain with minimal referred pain.

The third group is the one which in my opinion is most confused. Here is found involvement, primarily of the cervical articulations, attacking both the arthrodiae and the intervertebral disk articulations. The involvement may be seen on x-ray as a spondylosis or spondylarthrosis with or without narrowing of the intervertebral foramina. There may be narrowing of the intervertebral disk space with osteophytic overgrowth at the edges of the vertebral bodies. The acute herniated disk of the cervical spine would also be placed in this category. The so-called chronic herniated disk or retropulsed disk has clinical, roentgenological, and surgical findings similar to those of the spondylotics (osteoarthritics).[1] Joint reaction may be the result of the tissue injury of acute herniation. Cervical spasm as well as true radicular syndromes are present in these cases.

From the clinical standpoint alone it is apparent that there is a definite overlapping of symptomatology in the second and third groups. Differentiation of these two categories depends almost entirely on roentgen examination to determine evidence of frank bone destruction in the early stages of the process. In considering this topic I have eliminated brachial neuralgia or neuritis resulting from systemic causes such as diabetes mellitus, lead poisoning, or foci of infection, as well as the radicular pain resulting from spinal cord tumors. These latter do not enter in the discussion of neck and brachial pain originating from the cervical spine proper.

Patients with the first group of cervicobrachial pains are frequently seen by osteopathic physicians and the clinical picture is well recognized by my colleagues. There is the typical acute torticollis marked by pain when the head or neck is moved in certain directions. There is palpable tenderness of the cervical paravertebral musculature and a specific lesion of the cervical arthrodia. No tenderness is elicited by percussing the vault of the skull and, although hyperextension or lateral sidebending with rotation will induce pain, it is of the sort that is described by the patient as a muscle pull or a feeling of strain. There is no paresthesia or muscle weakness and the reflexes of the upper extremities are within normal limits.

The symptom picture in the latter two groups shows a definite overlapping with an element of pain and radicular distress of variable degree. The attitude of the head is of forward flexion with a loss of the cervical lordosis. Active and passive motion of the

Fig. 1

Fig. 2

Fig. 3

head and neck may vary from no motion in tubercular collapse of a vertebral body to mild active motion in all directions in the herniated disk complex. Both active and passive hyperextension of the head and neck induces pain which in most instances presents some phase of brachial neuritis discomfort such as severe shooting pain into one extremity plus numbness and muscle weakness. Again rotation and sidebending will be painful but the amount of pain induced will vary. Spondylarthrosis or spondylarthritis with narrowing of the intervertebral foramina on one side will definitely produce radicular pain on that side when the head and neck are sidebent to the same side. Percussion of the vault of the skull will cause cervical and brachial pain. Palpation of the cervical musculature will elicit spasm and tenderness. Spurling's test (or sign)[2] consists of hyperextension with rotation of the head on the neck and caudalward compression. This maneuver will reveal the typical brachial distribution of pain in the herniated intervertebral disk; it may also be positive with any pathology which is exerting pressure on the nerve root. Hypoesthesia and paresthesia will be found in some degree in almost any disease of the cervical spine proper in which there is nerve root compression. This may be from a herniated disk, spondylosis, pathological collapse of a vertebra, or primary or secondary bone tumor. There will be evident muscle weakness and atrophy, the distribution of which will depend upon the specific nerve roots affected. These same muscles may show fasciculations due to the irritability of the nerve root and the progressive weakness of the involved muscles.

CASE HISTORIES

Thirteen cases are presented to demonstrate the clinical and roentgen findings in the syndrome of cervicobrachial pain that is under discussion.

Case 1. M. C., female, aged 29, has had recurrent stiffness in the neck for the past 7 years. No radicular pain was present. Stiffness was first noticed following twisting of the neck during a nightmare. Except for a period during which the patient had been receiving osteopathic therapy, treatment had been ineffectual. The only positive physical finding was the presence of slight restriction of motion on flexion, sidebending, or rotation of the head to the left. Movement of the neck produced a "popping" sensation. A slight increase in cervical lordosis was the only positive x-ray finding. Otherwise the roentgen examination revealed an apparently normal cervical spine with proper axial height to the vertebral bodies and proper size to the intervetebral foramina (Fig. 1).

In my opinion, this is a case of chronic lesioning of the cervical spine with a superimposed psychoneurosis. The sole reason for its inclusion in this paper is to demonstrate the first step in the change from a simple osteopathic lesion of the cervical spine to a chronic state that is most difficult to remedy. The patient received osteopathic manipulative treatment with manual traction and in addition was instructed in exercises designed to relieve the cervical musculature. There was no change and the treatments were stopped prior to a full trial.

Case 2. A. R., female, aged 52, presented symtoms of pain over the left shoulder with radiation of pain to the left arm associated with a constant sidebend of the neck to the left. Onset of symptoms occurred 25 years ago when the patient lifted a tub. The pain, which had been intermittently severe since its onset, had become much worse during the past few months. Physical examination revealed the head held in forward flexion with rotation to the right and sidebend to the left. Motions of the neck were spasmodic; however, active motions could be carried out with no apparent restriction. There was pain on forward flexion and passive restriction on rotation or sidebending. No pain was induced upon percussion of the vault of the skull. There were no positive gross neurologic findings. The x-ray (Fig. 2) indicated the established cervical sidebend with convexity to the right. There was a chronic spondylarthrotic change with partial resorption of the articular cartilages of the third to sixth cervical facets on the left.

The patient, I believe, had a mild spasmodic torticollis with underlying spondylarthrosis of the cervical spine. There is no question that the degenerative joint disease will progress. The problem which interests me in this case is whether the joint disease resulted from an earlier lesioning of the neck on a simple basis, that is, an osteopathic lesion with secondary spasmodic changes followed by arthrosis, or whether the sudden strain to the neck in 1926 produced minute trauma to the joints with subsequent degeneration and later development of the spasmodic torticollis as a modified defensive measure. The patient was given Tolserol, Tubadil, phenobarbital, osteopathic manipulative treatment, and applications of heat. A brace was recommended but not accepted. The latter suggestion was based on the fair results obtained in a few cases of spasmodic torticollis where the constant strain on the cervical articulations was helped. The patient has had only mild improvement. I believe her pain is the result of muscle spasm and neuralgic pain of a referred nature.

Fig. 4 Fig. 5 Fig. 6

Case 3. F. H., female, aged 59, presented symptoms of 3 months' duration of pain in the neck which extended across the shoulders and down into the right hand. Recently the left hand became similarly affected. X-ray studies (Fig. 3) showed evidence of compression of the sixth cervical vertebra 1 month prior to my seeing the patient. Displacement of the fifth cervical vertebra on the sixth with bridging was apparent. Physical examination revealed atrophy of the right hand with the extensor muscles of the right forearm being particularly weak. Radial reflex on the right was absent and the biceps and triceps reflexes were diminished. The Spurling sign was positive. Motions of the neck were moderately restricted but were only slightly painful. The patient was hospitalized for further study and application of continuous traction. Blood tests made in the hospital were negative for chemical evidence of destructive bone disease. After 24 hours of continuous traction (with apparent improvement) the patient became irrational and fell out of bed. The right humerus was fractured in the fall. This complication was followed by a period of congestive heart failure and renal suppression. Eight days after admission the patient presented evidence of a transverse myelitis with weakness in the legs, hypoethesia in the trunk and legs, and a neurologic bladder. Traction was continued for 12 days with only slight improvement. After the patient was transferred elsewhere it was reported that myelographic studies were made which showed a number of cervical blocks. Laminectomy was performed. The patient died on the second postoperative day. The surgical finding was spondylosis with impingement on the cord.

My first thought about this case was to determine a pathologic cause for the compression of the sixth cervical vertebra. Along with this was the immediate demand for alleviation of the apparent pressure phenomenon. Since no history of trauma was elicited and there was no proof of bone disease, it was felt that the compression may have been due to an old, forgotten trauma with the present symptoms resulting from spondylosis. Pressure relief was attempted by utilizing continuous traction; traction failed, however, because of the patient's inability to cooperate. X-rays taken prior to transfer from the hospital showed no change in the cervical spine when compared with x-rays taken at the time of admission to the hospital.

Epstein and Davidoff[3] reported six cases of chronic hypertrophic spondylosis of the cervical spine with compression of the spinal cord and nerve roots. These cases went to surgery and were proved to the satisfaction of the authors to be caused by the spondylosis. All cases showed variable signs and symptoms referable to cord disease and root compression although the latter predominated as the most prominent sign. It is of interest to note that two of the six had definite improvement after the laminectomy.

Case 4. J. L., male, aged 48, was suffering from pain in the right shoulder of 9 weeks' duration; his condition was becoming progressively worse. The neck was exceedingly stiff and there was numbness and weakness in both hands. There was also weakness in the right leg. The patient reported that he had difficulty in swallowing and that coughing made the pain shoot into both arms. The physical examination revealed a cervical kyphosis with gibbus at the sixth cervical vertebra. There was no motion in the neck. Percussion tenderness was found over the vault of the skull and over the gibbus. Muscle weakness was present in both arms with a diminution of the deep reflexes on the right. There was no sensory aberration. X-rays indicated a collapse of the sixth cervical vertebra with involvement of the superior portion of the seventh. The vertebrae above the sixth fell anteriorly. Possible abscess formation was noted anteriorly. The condition was diagnosed as tuberculosis of the cervical spine. The patient was given streptomycin and the head, neck, and chest were placed in a cast. After 4 weeks the cast was changed because of decubitus formation. A total of 60 grams of streptomycin were given before the drug had to be discontinued because of toxic reactions. Although completely free of pain, the patient became progressively worse. Loss of reflexes occurred in both upper extremities. A positive Romberg sign, bilateral ankle clonus, and hyperactive reflexes in the lower extremities developed. The patient was referred to another institution for laminectomy because he could not be controlled. He is still hospitalized although the laminectomy has been performed.

In this case there was a rapid onset of what appeared to be brachial neuralgia but which was later found clinically and roentgenologically (Fig. 4) to be tuberculosis of the cervical spine. The striking characteristics of this case were (1) the marked rigidity of the cervical spine with absolutely no motion either actively or passively and (2) the presence of the cervical gibbus. Along with the brachial pain, the patient had pain on palpation and percussion and during any forced attempt at motion of the neck. The conservative treatment failed to halt the progress of the disease and laminectomy was recommended.

Tuberculosis of the cervical spine is not common. In my experience I have found this infection, when involving the spine, to affect most frequently the lumbar region. I have had a few cases of tuberculous involvement of the dorsal vertebrae but my only case of tuberculosis involving the cord, aside from the present case, was a patient with an epidural abscess

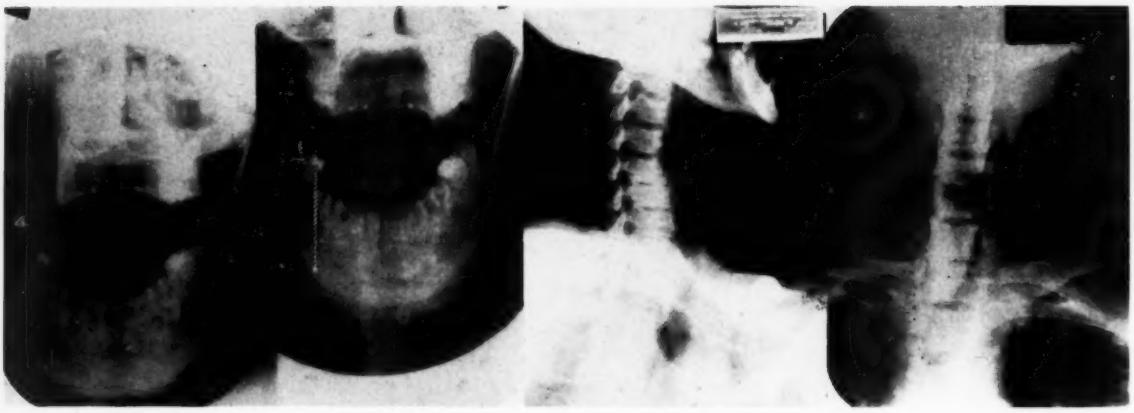

Fig. 7a Fig. 7b Fig. 8 Fig. 9

which was not primary in the bone. It was the result of drainage from a focus in the neck (postpharyngeal abscess) down the fascial planes with erosion through the lamina of the eighth dorsal vertebra. The patient presented a complete paralysis but responded to laminectomy, drainage, and streptomycin. He had an eventual complete cure with no neurologic signs (at this writing) although he had three relapses, all of which responded favorably. The effect of antibiotic therapy in this instance was exactly opposite that in case 4 in which the streptomycin had little or no effect. Cope[4] reports eighteen cases of actinomycosis of the vertebral column with eight cases showing cervical spine involvement. In the latter group the major complaint was cervical pain with limitation of motion. In some there was evidence of radicular pain, weakness, and wasting. In treating actinomycosis of the vertebral column both Cope and Brett[5] obtained good results using streptomycin and penicillin along with incision and drainage.

Case 5. B. D., male, aged 21, reported pins and needles in the neck and jaw with inability to maintain the neck or head in any one position for any length of time. The symptoms, which the patient had experienced for 7 years, were intermittent in character. The original trauma was traced to an accident which occurred while the patient was horseback riding: he was jackknifed with his head forcibly flexed. (The patient first became aware of the pathology when he was x-rayed by the army and was told that he had an absence of the odontoid process of the second cervical vertebra.) Physical examination revealed no restriction of motion of the neck; however, extremes of motion induced pain. The cervical muscles were very spastic and there was prominence and deviation of the spinous processes of the third and seventh cervical vertebrae. Reflexes were equal and active. Yawning induced paresthesia in the neck and mandibular area. The following findings were revealed by x-ray examination (Fig. 5): "Developmental absence or agenesis of the odontoid process of the axis with separate or freely floating ossified apical nucleus of the dens. Anteroposterior atlanto-axial vertebral disalignment, i.e., anterior subluxation of the atlas to the underlying axis." The patient was instructed to refrain from any activity which would throw strain on the neck. Shortly thereafter, however, he was in a serious automobile accident in which he suffered fractures and concussion with no apparent ill effects to the neck. Discomfort began to increase about a year following the accident. The patient complained of paresthesia and pain in the arms upon yawning. Since coming under my observation the patient has vacillated between periods of improvement and periods of distress.

Absence of the odontoid process is considered exceedingly rare. Stiefel[6] reports three cases in the literature and one of his own. His patient presented pain posteriorly in the neck with unusual excursion of the head during passive motion.

The patient in case 5 has, in effect, been living on a keg of dynamite; the least amount of trauma could cause dislocation. Yet he has been subjected to many serious injuries in which the neck has been indirectly involved with no variation in the clinical picture. This makes me believe that there is some fibrotic band maintaining the proper relationship of the articular structures despite the lack of a proper odontoid. This patient is still a candidate for surgical fusion but no definite decision has been taken in respect to this procedure.

Case 6. J. McC., female, aged 25, has suffered pain in the left suboccipital region for the past 3 years. Until 1 month ago the pain had been temporary and had responded to osteopathic manipulative treatment. Following a cross-country trip which included sleeping in the back seat of a car with the neck acutely flexed, the pain became persistent and was associated with nausea and vomiting. There was radiation of pain over the anterior aspect of the left chest, the left scapula, and the left arm. Pins and needles were felt in the left arm. Physical examination showed the head held forward. Sidebending to the right was restricted but sidebending to the left was more painful. A positive Spurling sign was elicited on the left. Percussion tenderness was found over the vault of the skull. Tenderness was present over the atlas and axis on the left. Neurologic findings were negative. X-ray revealed anomalous development of the atlas with no true odontoid configuration. Also there was a narrowing of the seventh cervical disk space due to flexion of the seventh cervical vertebra on the first dorsal vertebra (Fig. 6). The patient was hospitalized and traction to the cervical spine was applied. Muscle relaxants (Tubadil and Tolserol) were administered. Recheck x-rays (Figs. 7a and 7b) made in the hospital showed aberration in the development of the atlas with what was thought to be the odontoid off to the right. The patient showed improvement, except for continued nausea and vomiting, and was discharged from the hospital wearing a cervical brace. The patient has been rechecked at intervals and does not have cervicobrachial pain.

The condition of this patient was diagnosed as acute torticollis with anomalous development of the atlas. The pain, I feel, was the result of muscle guarding which evolved as a defensive measure to protect the strain thrown on the congenitally weak area of the cervical spine. Surgical fusion was considered in this case but the patient preferred to wait and see if she could be made as comfortable as she had been prior to the onset of the persistent distress. While the conservative plan of therapy relieved her symptoms, it definitely did not cure the patient. I feel that she will eventually have to resort to surgery.

Fig. 10 Fig. 11 Fig. 12

Case 7. I. G., male, aged 66, presented symptoms of pain in the left shoulder with radiation of pain to the fourth and fifth fingers accompanied by numbness. The pain, which varied somewhat in intensity, had been present constantly for 6 weeks. The patient had undergone various forms of therapy with no apparent improvement. Physical examination revealed a cooler sensation to the left hand than to the right; also, deep reflexes were diminished in the left upper extremity as compared to the right. Very slight palpatory tenderness was elicited in the neck with mild restriction, although no pain, on motion. There were no objective sensory aberrations. X-ray studies showed narrowing of the sixth cervical intervertebral disk with spondylosis and narrowing of the sixth cervical intervertebral foramen on the left side. The patient was hospitalized for more complete study. Pantopaque myelographic findings were negative for the cervical column. There was a slight increase in the cerebrospinal fluid protein. Since the patient had an allergy to certain foods, treatment was directed in part toward alleviating the allergy. In addition, antirheumatics, brachial plexus blocks, and osteopathic manipulative treatments were administered. The patient was discharged from the hospital improved.

Cervical spondylosis is a very frequent finding in persons over 40 years of age. Some investigators feel that the mere presence of degenerative arthritis of the cervical spine is not sufficient to induce the brachial neuritis, and that an additional agent in the form of infection, toxicity, or metabolic derangement is needed to induce the onset of the pain associated with the degenerative joint pathology. Further support for this view may be found in the fact that the incidence of arm pains is far less than the actual incidence of cervical osteoarthritis;[7] also, the changing picture which these cases present with long periods of complete freedom from any distress is significant. This patient, I feel, presented a picture that could fit into the above description: there was cervical spondylosis plus an allergic phenomenon. Local treatment directed to the cervical spine and correction of the allergy provided the necessary therapy.

Case 8. E. K., male, aged 49, suffered pain in the left shoulder with radiation into the left arm and over the left clavicle. Numbness was present over the left shoulder. The patient reported that mild neck and shoulder pain had been present for months but that symptoms had become more marked during the preceding 3 weeks. Occasional pins and needles were noted in the left hand; however, the chief complaint which induced the patient to present himself was severe pain in the left arm brought on by lifting the arm during shaving. Physical examination showed the head held forward. Percussion of the vault of the skull elicited no pain or tenderness; hyperextension of the neck did induce pain. The Spurling test was positive for both the right and left sides. Sidebending of the neck to the right increased the distress. Neurologic findings were negative except for an early atrophy of the left deltoid muscle. X-ray examination (Fig. 8) showed narrowing of the fifth cervical disk, reduction in the axial height of the fifth cervical body, cervical kyphosis centering at the fifth and sixth cervical vertebrae, and spondylarthrosis of the fifth, sixth, and seventh cervical vertebrae. The symptoms were diagnosed, therefore, as chronic discogenic spondylosis of the fifth and sixth cervical vertebrae with narrowing of the fifth intervertebral disk. The lesion was considered to be possibly post-traumatic in origin. Conservative treatment, consisting of osteopathic manipulation, diathermy, local anesthetic infiltrations, and vitamin B_1, resulted in improvement. The patient was symptom free in 6 weeks.

This case reveals a symptom complex that may be due either to the spondylosis or to an actual lateral disk herniation with mild radicular symptoms. Myelography was not done because the patient showed definite improvement. The real cause of the symptoms can be found if the patient reverts to his clinical picture and surgical intervention is necessitated. Both clinical and x-ray examination indicated two entities. Jefferson[1] reviewed twelve cases which presented similar pictures both clinically and roentgenologically; however, he had the advantage of Pantopaque myelographic studies on two and surgical exploration on four to confirm his diagnosis of a laterally placed herniated disk. It must be kept in mind that cases such as these can show progression of symptoms with evidence of permanent root damage and cord compression as a result of either further productivity of the spondylosis or further herniation.[3, 8] The latter is not common but should always be given consideration.

Case 9. W. W., male, aged 48, complained of pain in the left arm beginning in the shoulder and radiating down to the wrist. Numbness was present in all the fingers of the left hand and there was weakness in the left arm. The patient reported that the pain was so severe that he could not lift his left arm to shave or tie his tie. Body movement or coughing increased the pain. Onset of symptoms occurred 4 weeks earlier and was related to a stiff neck. The patient reported a similar episode in 1950 which was relieved in 1 week. In 1943 the patient was in a severe accident at which time he was unconscious for 24 hours. Physical examination showed the head to be held forward. Motion of the neck to the left was restricted and painful. There was cervical pain induced on percussion of the vault of the skull and also percussion tenderness was elicited over the fifth, sixth, and seventh cervical vertebrae. There was a positive Spurling sign on the left. Although the head could not be

extended it could be flexed. Further findings included slight atrophy of the left deltoid muscle, no reflex changes, and hyperesthesia over the outer aspect of the left arm. The patient was hospitalized. X-ray (Fig. 9) revealed cervical spondylosis with narrowing of the fifth and sixth cervical intervertebral spaces while Pantopaque myelography showed a lesion on the left of the fifth cervical intervertebral disk. During laminectomy of the fourth, fifth, sixth, and seventh cervical vertebrae, a hypertrophied ligamentum flavum with small retropulsion was found laterally placed at the fifth cervical intervertebral disk. The disk was left undisturbed and the nerve root freed of adhesions. The patient made an uneventful recovery with complete freedom of discomfort since surgery. There have been no sequelae.

This patient had a retropulsion of a cervical disk with sufficient protrusion to produce radicular signs and local defensive symptoms and signs. There was also an associated spondylosis, which is rather common in these cases; however, I feel the symptoms resulted from true disk syndrome rather than from the spondylosis. Bradford and Spurling[8] describe the usual occurrence of the cervical disk herniation at the midcervical level whereas Jefferson[1] places the most common site at the seventh cervical level and the next most common site at the sixth cervical level. Case 9 was a fifth cervical lesion while case 10 demonstrates a sixth cervical lesion.

Case 10. B. L., male, aged 46, presented a 3-week history of pain in the upper portion of the back with radiation into the right arm. The symptoms began as a stiff neck upon awakening in the morning. The patient reported a similar episode which took place 2 years earlier and which responded to osteopathic manipulative treatment. No paresthesia or weakness was noted in the right arm. Physical examination revealed the head to be held forward and sidebent to the right. Extension or sidebending of the head to the left induced pain. There was no tenderness and the neurologic examination was negative. Conservative therapy using a Thomas collar was advised but the patient continued to have distress and sought aid from other physicians. One month after the original examination the patient again presented himself. Findings included weakness in the right arm, diminished right biceps reflex, diminution in the size of the right forearm and arm, and sensory impairment over the tip of the index finger. Radiographic study at this time revealed proliferative reaction at the seventh cervical vertebra with impingement on the seventh intervertebral foramen on the right. The patient's condition was unchanged when rechecked 1 month later. A course of roentgen therapy was instituted and four treatments resulted in improvement in pain symptoms; however, there continued to be definite weakness, atrophy, and sensory impairment present in the upper right extremity. The Spurling test was positive on the right and numbness could be induced by simple extension of the hand. The patient was hospitalized and Pantopaque myelographic findings (Fig. 10) indicated a lesion on the right at the sixth cervical intervertebral disk level. Laminectomy of the fifth, sixth, and seventh cervical vertebrae was performed and the retropulsed disk removed at the sixth. The patient made a good postsurgical recovery with immediate disappearance of arm pain. Pain was present in both axillae, however. This pain was thought to be the result of positioning at time of surgery. Weakness and numbness persisted in the right arm but was improved by time of discharge from the hospital. One month after operation the patient had 90 per cent improvement in right arm strength, no sensory aberration, and normal reflexes. Two months postoperatively the patient complained of weakness in the legs and inability to walk normally. The neurologist who examined the patient in the hospital prior to surgery was of the opinion that this latest development was the result of a psychic overlay with no neurologic disease apparent. It is now 2 years since the patient underwent surgery and he is carrying on full occupational duties. He has had vague complaints since but they have not been referrable to his former distress.

Pain and stiffness of the neck are usually the first symptoms of cervical disk herniation. They may recur or persist. Radicular pains develop later but the radiating pain is at first neuralgic and then becomes neuritic. Sudden movement, coughing, or sneezing aggravates the pain. A traumatic history is not always found; as a matter of fact, Bradford and Spurling[9] indicate that not more than 25 per cent of reported cases give a history of trauma. If the condition advances there may be signs and symptoms of spinal cord tumor or evidence of a degenerative disease of the spinal cord. Syringomyelia is always a possibility in differential diagnosis and should be ruled out by a competent neurologist prior to surgical intervention.[10] In the case above the patient's symptoms suggested the possibility of cord disease subsequent to surgery but it was ruled out in follow-up examinations.

The physical examination will present the local cervical findings, as described in the two preceding histories; however, there may be a minimal amount of localized neck tenderness even though there is loss of the cervical lordosis, sidebend with muscle spasm, and a positive Spurling sign. Atrophy, reflex changes, and sensory aberration will be present in the extremity involved. If there is actual cord damage the neurologic signs and symptoms of a pyramidal tract lesion will be evident and a variable sensory change in the lower extremities present. No constant change has been found in the cerebrospinal fluid. In case 9 protein was normal in the fluid; in case 10 it was slightly elevated. X-rays show a narrowing of the intervertebral disk space and frequently a concomitant spondylosis. Pantopaque myelography provides the greatest aid in diagnosis. Treatment of this condition is both conservative and surgical. Case 8, felt to be a disk lesion, responded to conservative measures. Cases 9 and 10 required surgery because the distress progressed and there was actual increase in the neurologic findings. When disk syndrome is accurately diagnosed, laminectomy is the treatment of choice. Bradford and Spurling recommend the transdural approach for the usual disk with section of the dentate ligaments. These same authors describe a case in which just the unroofing was carried out with complete relief of symptoms as described in case 9. End results of surgery in cervical herniations with cord compressions are given as follows: one third of the patients were definitely improved, one third were slightly improved, and one third showed no improvement.[11] It must be kept in mind that these are not just cervicobrachial cases but those with cord compression.

Case 11 (clinic). J. S., male, aged 47, complained of inability to raise his right arm to a normal height; he also reported an ache in the right side of the neck and shoulder with radiation of pain into the right arm. Numbness was present in the right arm and pain and a "funny feeling" in the left arm. Onset of symptoms was traced to an accident 5 years previous in which the rear of the patient's cab was struck by a truck. Involvement of the left arm was of only 2 weeks' duration, however. Physical examination revealed atrophy of the cervical paravertebral musculature on the right and of the muscles of the shoulder girdle on the right. Pain was induced by hyperextension of the neck; otherwise, local examination of the cervical area was negative. Right pectoralis muscle reflex was diminished and there was marked winging of the right scapula. X-ray examination (Fig. 11) showed mild spondylotic change involving the fifth and sixth cervical vertebral bodies with some narrowing of the intervertebral disk fissure at the fifth and sixth interspace. There was a slight decrease in the cervical lordosis. Dextral sidebend produced alteration of cervical mechanics at the fifth cervical level. Elongation of the transverse processes of the seventh cervical

vertebra with rudimentary rib formation on the left side was also seen.

This case was included because of the atypical complaint of actual atrophy localized to the shoulder girdle on one side with associated cervical and arm pain on the other. The history of accident aroused suspicions of cervical spondylosis and possible disk lesion. This suspicion was somewhat borne out by x-ray examination but further confirmatory investigation must be carried out to substantiate the diagnosis. The opportunity to complete this investigation on the patient has not been available. However, the patient is now waiting for a hospital bed and it is hoped that Pantopaque myelography can be undertaken soon. This case may be just a variation of the entire syndrome being described or it may fall into a true neurologic category of a space-taking lesion or a degenerative lesion of the spinal cord. The patient was evaluated by the neurologic department but no conclusive findings were reported aside from the localized signs already described.

Case 12. O. McA., male, aged 47, reported pain radiating from the neck into the shoulders and then into the arms. The pain, which was concentrated on the left side, was intermittent, becoming worse at night. Onset of symptoms took place after the patient had slept on a sofa. They occurred 6 days previous to his first examination. Onset was marked by stiffness in the neck and left arm. Pain became so severe that narcotics were required for relief. To date osteopathic manipulative treatment has been of no help. Physical examination of the neck and left shoulder was negative except for a slight forward bend of the head. Pain was induced by bearing weight on the left arm upon rising from a chair. X-ray examination (Fig. 12) revealed a slight decrease in the cervical lordosis. There was narrowing of the third intervertebral foramina on the right and left with a proliferative bone change extruding upon the normal space giving it an irregular narrow configuration. The patient was hospitalized. Continuous traction was applied and brachial plexus nerve blocks performed. In addition to the roentgenologic findings two other positive findings were elicited: (1) There was a slight increase in cerebrospinal fluid protein and (2) leukocytosis of the blood. The patient was released from the hospital after 6 days; his condition was pronounced definitely improved at time of discharge. According to the latest report from his physician, the patient remains relatively free from pain although the left deltoid muscle shows some atrophy and there is some degree of weakness in the left arm.

This patient had a cervicobrachial neuralgia or brachial neuritis which was due, in my opinion, to impingement on the intervertebral foramen at the third cervical vertebra plus a low-grade systemic infection of which there was no clinical evidence aside from the leukocytosis. The organic change in the cervical spine was present prior to the onset of the acute distress; however, the combination of the pressure factor—which was increased by a faulty posture—with a systemic infection was sufficient to change the simple stiff neck into a radicular syndrome. The picture of this patient follows closely those cases reviewed by Uhlemann.[7] Another important fact which I have already mentioned is the age incidence. Most of the patients in this study were in their forties; this is a common finding in the literature on this subject.

Case 13. E. L., male, aged 43, presented symptoms of several months' duration of pain in the right shoulder radiating from the base of the neck. The pain, which became worse at night, was also increased by certain motions of the right arm. The patient reported numbness on the ulnar side of the right hand, a condition which was particularly aggravated during attempts at shaving. Physical examination showed the position of the head and neck to be normal. A slight Spurling sign was present on the right side. Motions of the cervical spine induced mild cervical discomfort and there was a questionable ulnar sensory abnormality on the right. Tenderness was elicited in the right shoulder at the point of insertion of the supraspinatus muscle and abduction and external rotation of the arm induced pain. There were no reflex or pulse abnormalities. X-ray examination revealed the following findings: tendinitis calcarea of the right shoulder, reduction in height of the sixth cervical disk space, and spondylotic reaction at the sixth and seventh cervical vertebrae in combination with encroachment on the intervertebral foramen at the sixth cervical vertebra. The patient received 1 month of osteopathic manipulative therapy in combination with x-ray therapy. He showed moderate improvement and after an additional month of osteopathic manipulative treatment was symptom free. The patient experienced a recurrence of his condition 2 years later which responded to physiotherapy administered by an allopathic orthopedist.

This patient presents a dual syndrome. There was pain arising from the tendinitis calcarea as well as from the cervical spondylosis. I feel the major distress was from the spine and the treatment was mainly directed toward alleviating that condition. It is not infrequent for a patient to have an obvious but relatively symptomless pathology removed when there is actually another present which is the true cause of the discomfort.

CONCLUSION

In conclusion I wish to repeat that the problem of cervical pain is a difficult one from both the diagnostic and the therapeutic aspect. An accurate diagnosis is of paramount importance and the need of the radiologist, neurologist, and internist working with the orthopedist toward that end should be more fully appreciated. Conservative treatment should always take precedence, but surgical intervention should be used without delay if progression of the syndrome is obvious and the lesion is one amenable to surgery.

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The Management of Joint Fractures

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The title of this paper may suggest that the writer is underestimating the intelligence of the members of the American Osteopathic Academy of Orthopedics. It may be felt that the topic is well understood by even the embryo orthopedist and surgeon and, further, that elementary textbooks and current literature are replete with information on this subject. Yet the very abundance of the literature and the conflicting statements of equally prominent and experienced authorities bears testimony to the fact that this very basic problem of orthopedic practice remains as yet unsolved. This in part may be the result of the printed word; in the literature there is a tendency to classify and discuss all fractures whether of the shaft or joint, under the same general heading. The principles pertaining to the one are applied to the other.

This paper is designed to show that with the fact that shaft and joint fractures are both "broken bones" the similarity ends. Consequently the management of joint fractures may be justifiably different to that of fractures of the shaft.

Having been born, weaned, and reared on the so-called standard and accepted methods of treatment of fractures, including those of the joints, the writer accepted with some degree of fatalism the assumption that in joint fractures, particularly the more severe variety, therapy would produce relatively poor functional end results. However, in more recent years this fatalism has been replaced by an attitude of inquisitive investigation with the result that philosophies in the management of these fractures have been propounded. Though somewhat heretic, its value has been substantiated by scientific data and good clinical end results. This then is the justification for the paper. Much will be debated and challenged, but if it creates discussion it will have served its purpose.

A foundation must first be laid by showing wherein lies the difference between shaft and joint fractures. A primary consideration is the fact that a joint is a functional structure; whereas a shaft may be considered a static structure. Therefore, therapy of fractures of the shaft is directed toward solid repair in relatively normal alignment; while in therapy of joint fractures the primary object is the restoration of function. A shaft fracture is merely a broken bone; a joint fracture involves bone, cartilage, synovia, capsule, ligaments and muscles, and the tendons which activate the joint. The management of a joint fracture necessarily must take into consideration all of these elements. A shaft is predominently cortical bone in which union is relatively slow and in which there is a tendency to delayed union and nonunion. The osseous component of a joint is almost entirely cancellous bone with a capacity for rapid production of callus and in which delayed union is rare and nonunion unique.

If a joint is to function adequately, as nearly anatomical alignment of the joint surfaces as possible is a prerequisite. If Wolff's law that "function determines structure" is accepted, it would appear logical that during the process of repair a functional structure should maintain, insofar as possible, its normal activity in order that the reparative processes and tissues will be of a type consistent with the normal function.

Arguments may be advanced that experimentation has shown that renewal of normal tissues does not necessarily follow maintenance of function; these arguments might be answered by stating that perhaps we are prone to accept laboratory findings as absolute rather than to use them as guides. Perhaps at times the interpretation of findings is in error.

It may appear sacrilege in this scientific era to revert to some of the simpler observations of human function and natural reactions and responses to injury, but the fact that the human species has existed for thousands of years cannot easily be discarded, the laboratory notwithstanding. Neither can it be overlooked that nature thousands of years before the advent of the surgeon and plaster of paris evolved some practical functional methods of rehabilitation of injured man that have not, as yet, been demonstrated in the test tube. These arguments could certainly be advanced and, practical though they might be, they probably would be unjustifiably ignored. Consequently, acceptable laboratory data will later be presented in substantiation. The writer claims no originality of concept; it has in similar form appeared in the past, but it has been more or less discarded generally and, so far as the present generation of doctors is concerned, it has been forgotten or disowned.

Let us turn our attention for a few minutes to the severely damaged joint. Early we find intracapsular ballooning produced by hemarthrosis, edema of periarticular structures, altered circulation and trophic disturbances, damaged and possibly macerated soft tissue elements, and raw fractured surfaces of the bone. The fracture is reduced and immobilized for such time as is necessary for solid bony union to be visible at x-ray examination. During the period of immobilization the circulation becomes static, functional and elastic tissues become thickened by invasion of fibrous tissue, persistent local edema produces ischemia and replacement. The immobilizing apparatus is removed and a relatively stiff joint is the result. What now are our observations of this area? Intracapsular ballooning has disappeared, but intracapsular adhesions remain, the end results of organized hematoma. Pitting edema has subsided to be replaced by enlargement of a firm consistency. The periarticular structures are nonelastic and nonresilient and impart a thickened, leathery feeling to the examiner. X-ray examination reveals solid bony repair of the fracture. It reveals, in addition, spurs of masses of ossified callus extending around the fracture and into the joint and periarticular structures, and sealed to them because they have laid in constant apposition during the inflammation of repair. Permanent major loss of function is the end result.

A program of physiotherapy and exercise is instituted with considerable expectancy and enthusiam by

the novice, but with considerable prognostic reservation by the more experienced. After many weeks improvement is noted up to a certain point but not beyond. This is understandable because the reparative material and local tissues have become adult, dormant, and rigid; soft tissue contractures and bony blocks prevail. The patient is discharged. Shall we accept this situation passively, or shall we take up the gauntlet? If we are to improve the final result, it appears obvious that the conditions above described must be eliminated or at least modified to the greatest extent possible. Such modification is the foundation upon which functional treatment is based. Such modification is achieved by maintaining as nearly as possible the normal physiology of the area. The surgeon cannot transplant physiology into an area; therefore he must institute rehabilitation by and of the tissues in order to normalize their own physiology.

Momentarily by-passing the laboratory, we may in retrospect project our minds back to the time of early man, when treatment of injury was predicated upon instinct instilled by nature. The natural responses of primitive man and the animal of today probably are not excessively divergent. It seems unlikely that the primitive man, when injured, laid immobilized for months. His environment required activity as soon as possible, and certainly today observation of an injured dog or other domestic animal will reveal that he automatically protects an injured part until it is comfortable and then starts using it; without other treatment the part will develop function of an exceptional degree. Irrespective of the modern age, natural laws and responses should be respected; nature should be helped to do what comes naturally; diametric opposition appears illogical. When the time arrives that the surgeon can *heal*, rather than produce wounds, he may be justified in disregarding natural laws.

Returning from our contemplation of the intangibles of nature, we may now direct our attention to the more tangible findings of the modern research laboratories. Perhaps by analyzing them we may justify nature's normal reactions and responses and the propounded philosophy of early motion of the damaged joint.

The findings of Bailey,[1] Weinmann and Sicher,[2] and Maximow,[3] to mention but a few, indicate that "Bone formation always occurs and everywhere by differentiation of connective tissue,"[2] possibly from Maximow's undifferentiated mesenchymal or reticular cells, and, further, that both osteoblasts and chondroblasts arise from the same basic cells. Boyd[4] states that "Near the fracture the osteogenic cells proliferate in massive fashion, and may form cartilage instead of bone. This cartilage formation is most marked when there is movement. . ." Weinmann and Sicher[2] state that young connective tissue has potentialities which are lost in mature connective tissue, an observation entirely pertinent to the issue. These same authors remark that "There is a marked discrepancy between the histologic and the roentgenologic appearance of callus. Even at a time when histologic examination reveals advanced bone formation the callus is not yet visible in the roentgenogram."

The application of the above statements to the treatment of joint fractures should provide the basis for the following logical hypothesis:

First: If there is abundant callus histologically before any is visible at x-ray examination, it would seem that absolute immobilization is not necessary even until moderate, much less dense, callus is visible in the roentgenogram; therefore, at least guarded or controlled motion could safely be instituted early.

Second: If osteoblasts and chondroblasts arise from the same source, and if the first is prone to predominate during inactivity and the latter during activity, it would be logical to assume that as soon as the fractured surfaces have sealed that motion of a joint would produce cartilage in the callus invading a joint surface rather than solid bone, a most desirable circumstance.

Third: If young connective tissue has potentialities lost in mature connective tissue, would it not be justifiable to argue that in joint injuries undergoing repair it is better to establish normal motion which would permit all the reparative connective tissue, in bone, cartilage, capsule, et cetera, to undergo metaplasia to meet the function, rather than wait until these tissues have become adult and lost this power?

Based upon all that has preceded in this paper the following criteria are offered for the management of joint fractures:

1. As near anatomic restoration of the joint surfaces as possible should be achieved. If this requires open reduction, it should be performed. The hazard of postoperative infection is now almost eliminated by careful surgical technic and modern antibiotics.

2. Early movement and physiological function of the joint should be instituted. This does not require waiting until roentgenograms show callus. Rather the presence of callus is judged by the clinical evidence of firmness.

3. In certain types of Y and T fractures and in other fractures where satisfactory closed reduction could be performed but would require relatively prolonged immobilization to become firm enough to permit motion without displacement, internal fixation may be justified to allow earlier motion.

4. Hemarthrosis should be removed at the time of surgery or aspirated and diluted with saline in closed reductions to prevent intracapsular adhesions.

5. Active physiological functional use should be instituted, not static passive exercise.

6. Physiotherapeutic modalities, although they may have a place in the practice of medicine, do not promote the physiologic response produced by normal activity. They could be eliminated therapeutically but could be maintained as a psychologic aid.

GENERAL INFORMATION

The use of the hanging cast in the treatment of fractures of the neck of the humerus is a practical application of the theory under discussion. The institution of circumduction exercises, as soon as tolerated within a few days of the fracture, with progressive increase in the amplitude of motion produces a functional shoulder joint (particularly in the aged) superior to that resulting from prolonged immobilization in a spica cast, even though apparently better alignment appears in roentgenograms following use of the latter method. When open reduction and internal fixation have been performed for such fractures as Y and T

fractures of the distal humerus the cast is left on for only 10 to 14 days and is then discarded in favor of a sling and gradually increasing active exercise. When joint fractures such as intercondylar or supracondylar fractures of the femur are treated by continuous traction, accessory slings are placed strategically under the extremity and attached to ropes and pulleys with handles available to the patient to start a series of exercises in the apparatus within 2 weeks of the injury. Many of these cases have an established 50 per cent function on release of the apparatus after union is firm and only minor residual trophic changes.

CONCLUSIONS

The writer has propounded a philosophy in the management of joint fractures based upon early motion predicated upon physiological rehabilitation and has advanced historical and laboratory evidence to substantiate the philosophy; he is aware that conflicting evidence could be produced. Nevertheless, the writer is convinced that following the above principles he has managed fracture cases with superior functional results, and in the final analysis the proof of therapy lies in the rehabilitated joint.

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The Role of the Orthopedic Specialist as a Consultant

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"Stedman's Medical Dictionary" defines a consultant as "A physician or surgeon who does not take actual charge of a patient, but acts in an advisory capacity, deliberating with and counselling the personal attendant."

The total of medical knowledge has become so large that it is beyond the capacity of any one physician to have a complete command of the whole of it in all of its branches. In most hospitals this difficulty is solved by having on the staff specialists in all of the clinical subjects. Outside the hospital the system of group practice serves the same end to a lesser degree.

Orthopedic surgery is concerned with the physiologic function of the musculoskeletal system as well as the prevention, correction, and investigation of injuries, diseases, and anomalies of this system. Its many problems require the correlation of the skills of the clinician, the pathologist, the radiologist, the biochemist, the physiologist, and the physical therapist to achieve successfully the rehabilitation of the patient. The role of the orthopedic consultant in an osteopathic hospital is that of investigator and advisor and teacher of the general practitioner, the extern, the intern, and the resident.

The consultant can be invaluable to the general practitioner by making the diagnosis and by giving advice on the care of a particular patient. On the other hand, the consultant must guard against becoming so technical that the practitioner will despair of following the many details of the outlined treatment. This, if it occurs, is detrimental to the patient, the practitioner, and the consultant. Furthermore, the orthopedic consultant must remember at all times that he is simply the consulting physician on the case. He should make every effort to return the patient to his referring doctor impressed with the idea that consultation was requested for the sole purpose of insuring the patient of the best possible treatment available.

The consultant must plan his schedule so that he will have plenty of time to spend with each patient. The patient must never feel that he has wasted his time and money. It is well to remember that whatever the presenting condition, it is all important to the patient and his family. A few extra minutes will mean the difference public relationswise between success and failure in a particular case.

The orthopedic consultation service of Doctors Hospital, Columbus, Ohio, has been planned with two main goals in mind. The first is to give the referring physician the best possible help on his problem cases of all types with special emphasis on the nonsurgical cases which he will be caring for at home. The fact that the staff members appreciate this type of service was demonstrated during the first 9 months of 1951 when 368 cases were examined and reported on. (This does not include the many rechecks which were done routinely.) The second goal is to develop a teaching program which will give the young extern, intern, and resident a well-rounded background upon which to establish the type of practice necessary for the further development of the osteopathic profession. That this is also appreciated is shown by the fact that many of the externs and interns, after having been on this service, return to the department at every opportunity to take part in the activities there.

Externs and interns are assigned definite duties in the department which are rotated each week so that all receive a well-balanced training. During his service in this department each extern is assigned to an intern who instructs him in his duties. Both intern and extern are responsible to the resident who is, in turn, responsible to the department head. One week the extern-intern team works in the physiotherapy department giving all physiotherapy treatments. They also assist in the emergency department which handles all traumatic surgery and fractures. The other team, which works the floors, is responsible for all orthopedic cases in the hospital. Their job includes making early morning rounds and compiling the daily chart, called "the brain," upon which is recorded all of the perti-

nent facts concerning each patient on the service. The resident and the department head then review all house cases before the morning schedule is begun. The second team also assists in surgery and in the postoperative care.

Interns, under the supervision of the resident, take case histories of the outpatients who come in for consultation and record them on the audiograph. Before the orthopedic examination starts the intern who has taken the case history turns in to the examiner his diagnosis which is discussed at the end of the examination. In addition to such practical experience all externs and interns must turn in, at the completion of their service, a paper on an assigned orthopedic subject.

Under a program of this type it is advisable for the orthopedic consultant to establish a definite routine for his examination of the patient and for his report to the referring physician. The examination should be conducted along certain definite lines which can be expanded or curtailed as individual problems arise. We have found that by recording the history and playing it back to the patient much valuable additional data are obtained as the patient's memory is refreshed. Following the history, a very thorough physical and orthopedic examination is given along established lines with the findings recorded as each test is finished. We have found that by establishing a routine the examiner is soon able to follow his line of thought on the case without having to stop and decide on the next step. By recording each step promptly the full findings can be put down while fresh in the mind without undue loss of time.

After the necessary laboratory and x-ray examinations are made the patient is either returned to his room or dismissed to return to his home. He is told that it will take at least a week to correlate the findings of the physical, laboratory, and x-ray examinations and to return the report to his physician who will discuss the case with him as to diagnosis, prognosis, and treatment. We have made it a point at Doctors Hospital to send a complete report of the entire examination, along with our summary and suggested treatment, to the referring physician. We never give the patient a report directly. In the report we summarize findings and discuss the proposed treatment. This enables the referring physician to understand the case thoroughly and helps him to interpret the findings to the patient. All reports are made up in quadruplicate because many orthopedic cases have a medicolegal background and copies of the reports are required by attorneys or by insurance companies.

We find the orthopedic consulting service an excellent training ground for our externs, interns, and residents. By the time they have finished their service they have learned thoroughly the art of taking a good case history, of making a complete physical examination, and of correlating findings so as to arrive at a diagnosis from which they can outline the necessary treatment. The resident supervises the work of the externs and interns during the examination while the consultant dictates the findings of each test. After the examination each unusual case is discussed in private. Each extern and intern is given a chance to make his diagnosis and discuss his reasons for arriving at this diagnosis. At the end of the intern's period of service one of his early records is played back to him to help him to judge the progress he has made.

In discussing cases with the referring physicians I find that the majority of them review the entire report with the patient, explaining all the important facts brought out and outlining the proposed treatment. They also give the patient the prognosis he can expect if he cooperates in his treatment. This approach results in much better cooperation from the patient and consequently the physician has less trouble keeping the patient under control.

Certain patients are asked to return at a stated time for a recheck to determine the progress they have made and if necessary to institute a change in the type of treatment. This recheck examination gives the consultant a chance to learn whether the entire outlined program has been carried out and if not, why not. In some instances treatment is neglected through oversight; in others, the physician did not agree with the consultant; and in still others the physician did not understand the outlined treatment and simply omitted it.

From our past experience we have come to the conclusion that the consultant's obligation to the referring physician and to the patient is not ended when the report is mailed; he must follow up certain physicians repeatedly if the best results are to be obtained.

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PROBLEMS IN THE OPERATION OF A BONE BANK

There are still unsolved problems in connection with the operating of a bone bank. One of these is how to guard against the danger of transmitting the virus of infectious hepatitis or the parasite of malaria. . . . We have had no instance of such complications in any of our patients; but the recent occurrence of several cases of jaundice and one of malaria following blood transfusion emphasizes the fact that the danger exists. The method used by Reynolds and Oliver of preserving the bone in merthiolate solution would presumably eliminate this danger, but it remains to be proved whether bone that is preserved in a chemical solution will serve as well in the host, as bone that is not so treated, notwithstanding the good results listed in the preliminary report of these authors.

Another and recurring problem is whether it is safe to use bone that is not involved in the disease from an extremity that is amputated for a malignant bone tumor. We have used bone from the tibia in an extremity that was amputated for liposarcoma of the femur without any complication, but a medical-legal question of considerable importance is raised here, for which it is difficult to obtain any authoritative answer. —P. W. Wilson, M.D., *Journal of Bone and Joint Surgery*, April 1951.

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Hallux Valgus With Associated Tuberculosis

A Case History

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INTRODUCTION

This paper makes no claim of originality; rather, its purpose is to report an observation that is possibly unique. The writer has failed to find any references in literature, established or current, or gained information from discussions that would lead him to believe that the problem presented has ever been appreciated. It follows that his attention will almost certainly be called to similarities soon after finishing this report. The axiom that there is nothing new under the sun is very true, especially in orthopedics.

The area under consideration in this paper is believed by more than a few to be the site of much abuse from a mechanical therapeutic standpoint. How often do we hear that this or that bad result is due to a faulty procedure or a systemic trophic or chemistry disturbance? It would be well to review for a moment the recommended corrections of the hallux valgus lesion. Years ago Speed from Chicago spoke of a certain proximal lower extremity lesion as unsolved. As a result, in a very few years this lesion was being cared for in improved ways and results are almost 100 per cent better. It is a shame that he did not attach the same description to the distal lower extremity abnormality of hallux valgus, for it is indeed unsolved. No attempt will be made to present or elaborate on all procedures of correction. I will, rather, adhere to principles.

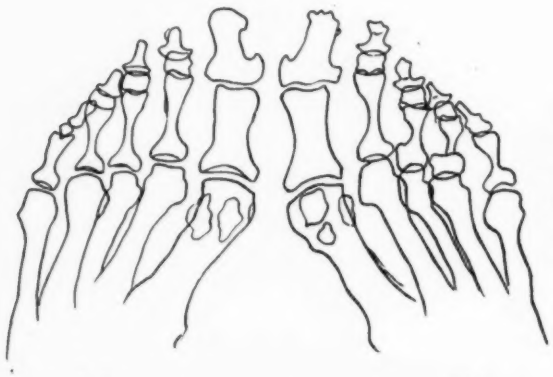
In the classical hallux valgus lesion we are told, and rightly so, that metatarsus latus and pes valgoplanus are associated and constant findings. If this is true, and I find myself in complete accord, how can a transplantation of the adductor hallucis tendon from its plantar migration to a medial prepared bed do anything but lock the rotated first metatarsal in a perverted position? The so-called newly arranged phalangeal position is really malalignment. We know that it is the osteoarthritis and bursitis that drive the patient to seek relief. Fortunately, the bursa is removed or drained. In any case, the patient gets some relief. Perhaps the lateral portion of the capsule has been sectioned and the relaxed tension will be helpful. The bed rest necessitated by the operation will aid no end in the osteoarthritis status but I fail to find any corrective measure that has been offered to restore normal foot function or prevention of recurrence of the irritation.

It should be kept in mind that we are discussing organic crippling lesions, not cosmetic affairs in this paper. Sesamoid corrections I refuse to dignify by discussing. Also, I wonder about the weird trimmings of abbreviated spurs, lippings, et cetera. What is the reaction of bone to the chisel? Osteophytes are the same in metatarsal or phalangeal areas as they are elsewhere.

Mayo's removal of the metatarsal distal head has been in ill repute with him and with bone surgeons for years. Only a few general surgeons are ever heard to recommend this procedure in these days. Removal of an important weight-bearing surface is rather tragic. The flail joint resulting from phalangeal base sectioning or total removal is mechanically unsound. Migration of the metatarsal head will be unhampered and stability is lessened. If we could only correct the latus perversion of the first metatarsal bone we would have something. I once put a cross screw, after correction, fixing the first metatarsal to the second and third. The result was beautiful on x-rays and the feet looked good. But with fatigue the feet were very painful so the screw was later removed, allowing abnormalities to return, and the patient felt greatly relieved.

CASE REPORT

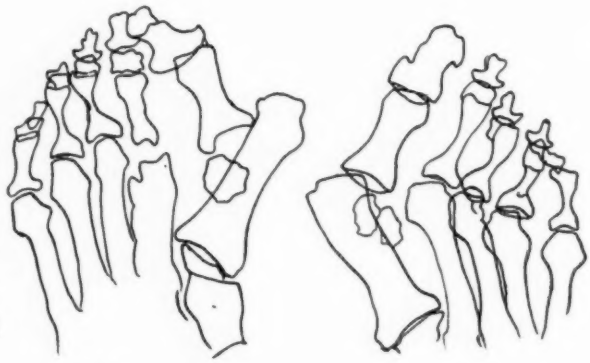
The patient is a male Mexican, 50 years of age, of rather slight build. He had been under observation for about 15 years at a Los Angeles hospital for varied neuroesthetic complaints. He was seen in varied departments from time to time. The general impression of this man was that his difficulties were of a functional nature. Placebos were given for his varied complaints. About 10 years ago he developed a rather severe alcoholic neuritis and some directed therapy was given him. Although he improved he frequently needed



Left Right

Fig. 1

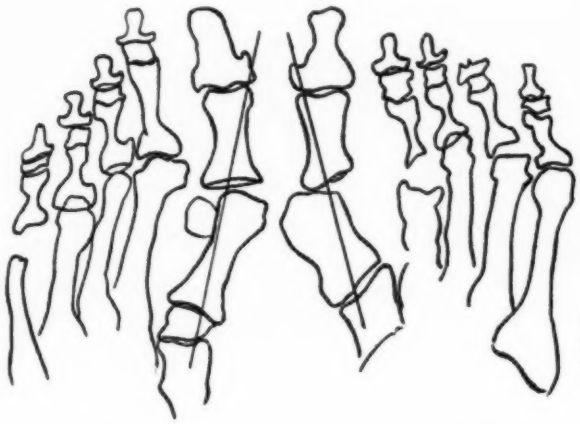
Fig. 1. Apparently normal findings, July 15, 1949.



Left Right

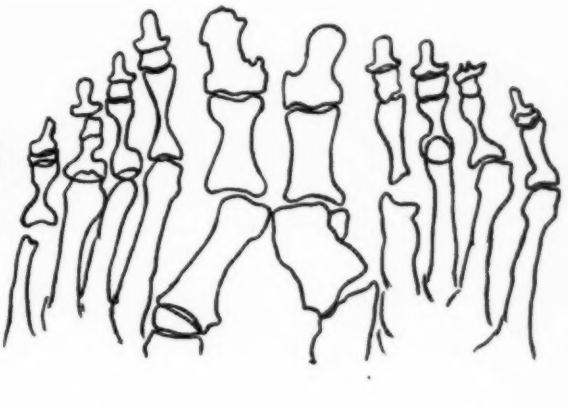
Fig. 2

Fig. 2. Pathological state 18 months later, January 30, 1951.



Right Left

Fig. 3



Right Left

Fig. 4

Fig. 3. Postoperative appearance with Kirschner wires in place, April 19, 1951. Eroded distal right fifth metatarsal and left second metatarsal are sites of dorsal sinuses. Fig. 4. Appearance on July 2, 1951.

assistance for the same difficulty. This man's appearance and general condition remained rather constant.

About 18 months ago he developed a rather obscure bilateral foot complaint. Fortunately, x-rays were taken and found negative. There were no physical observations of value. About a year ago he noted a rather startling bunionlike process on both feet. A necrotic skin lesion rapidly developed over the metatarsal heads. The skin sloughed shortly and the necrotic distal heads of the metatarsal bones protruded entirely. Varied ointments and treatments were given with no result.

The process advanced unobstructed. Recent x-rays were then referred to my department. Complete luxation of the metatarsophalangeal articulation of the great toe was noted bilaterally. The metatarsal head of the second toe of one foot was noted to be eroded. A well-established tuberculosis picture was present. Coccidioidosis, which in California must be considered in tuberculous like presentations, was ruled out.

The patient was admitted to the hospital and given bed rest and antibiotics for months. All that can be claimed for this treatment is that the process was static. Necrosis, both in soft tissue and bone, was due to pressure and devitalization. Correction of the luxation was necessary to eliminate pressure. However, knowing that a tuberculous sinus would never heal, it was with hesitancy that any plans were made. The metatarsal heads were dead. The Mayo procedure was the only choice. Also, there was no capsule or much soft tissue to maintain relationship.

At this point a chest consultant located an acid-fast lesion in the man's lungs. With the feeling that there was little to lose and a possibility of gain, surgery was suggested. Permission was given by the chest department of the hospital.

The necrotic heads were removed. There was no articular cartilage in either metatarsal or phalangeal articular area. Surprisingly, the osseous quality of the phalanges was fair. A Kirschner wire was run down the longitudinal axis of the toe to maintain alignment of a sort. No capsule tissue was found and no soft tissue was available for approximation. The tendons were pushed laterally by the abscess and were easily identified and protected. Skin closure was difficult because of removal of much of the necrotic areas but it was accomplished without pressure. Casts were applied and the Kirschner wires incorporated into the plaster. The surgery was done in March of this year, 1951. The postoperative period was stormy. Maggots and a rather offensive discharge were noted at all times. Casts were changed about 6 weeks after surgery. Wires were removed the week before. Surprisingly, the incisions were found to be healing. However, on one foot a sinus had been established over the head of the second metatarsal, the site of the eroded head seen preoperatively.

At about this time it was also noted that the fifth metatarsal head was starting to erode. Later a sinus established itself over this area and drained nicely. The generalized edema of the feet improved greatly. Custom made shoes with a metatarsal bar were ordered, but before they were obtained the man was walking contrary to order, but quite well, in cut-out shoes which he had decided were in order. The bunion sites of the surgical approach are well healed and may remain so if the other sinuses are not interrupted. Fortunately the sinuses point dorsalwards.

Although this paper is limited in scope and material, I feel that it merits more than limited consideration if there is ever to be any sensible relief of foot troubles. If this man could be observed for 5 or 10 years, it might be possible to rationalize a great deal. Or, if the treatment was in error, it will be quite plain at a later date.

Tuberculosis of the bone is a metastatic focus and a proof of disease elsewhere in the body. The rival powers of man and tuberculosis are delicately balanced. The virulence of tuberculosis is a constant; man is a variable factor, resistant and susceptible. Only too often a slight lowering of his resistance and he becomes susceptible to the disease until vigor and vitality are restored.

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Conservative Management of Low-Back Pain

A Summary

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In reviewing recent literature on the subject of chronic low-back pain, one finds that much has been written concerning diagnosis, etiology, and surgical treatment of this frequent complaint. Few authors outline a plan of conservative management for the patient complaining of pain in the low back. This paper will attempt to summarize the various types of therapy which can be used in managing this syndrome, with some emphasis upon the use of braces.

After the history and examination have been completed and the diagnosis determined, the proper course of management must be selected for the particular patient. Over twenty-five different types of treatment are mentioned in recent literature. Most of these will be briefly summarized. Before proceeding to specific treatments a quotation from Barr and Marble[1] on the subject of general principles is in order.

(A) Conservative treatment should always be tried first unless there is a marked root involvement with muscle weakness which demands early root decompression to prevent permanent paralysis. A myelogram should not be done until conservative measures have failed and the patient is ready for surgery.

(B) As a rule patients in the 5th decade or older are best treated conservatively.

(C) Repeated attacks of low back disability, if adequate conservative treatment has been tried, indicate surgical treatment.

(D) No treatment, least of all surgical, is of much avail where legal settlement is pending.

(E) Belts or braces must be adequate, otherwise they are useless. In general they are temporary methods to get relief from the acute symptoms. Attempts must then be made to improve musculature and body mechanics so that support may be discontinued gradually. The narrow sacroiliac type of belt is usually of no value. The apparatus should be either the lumbosacral type of corset or a brace.

(F) . . . . A thorough examination followed by some explanation to the patient of his injury is a very important part of his treatment. . . .

(G) An adequate follow-up on the progress of the patient with a back injury is important. . . . .

Osteopathic manipulative treatment is the most generally effective single method of treating the low back. The wide success of osteopathic physicians and surgeons over a period of years points to this. The proper manipulative treatment will give some relief to most anyone with low-back pain. The treatment may be of a soft tissue or of a corrective nature. The choice of type of treatment, length of treatment, and specific technics comes only with experience and background on the part of the physician. Manipulative treatment should be given only after adequate examination of the patient. It should certainly be a major part of the management of almost every case of low-back pain.

If the usual osteopathic manipulative management is not "getting the job done," or if in the opinion of the doctor it will not provide adequate mobilization of the low back, manipulation under general anesthesia or caudal anesthesia should be considered. This is generally used in cases of lumbar rheumatoid myofibrositis, traumatic fibrositis, and stiffness of the lumbar and sacroiliac joints. The patient must be hospitalized for the procedure. Complete low-back x-rays are essential before manipulation. Technics similar to those employed in the usual manipulative treatment are used, but they must be more carefully and more specifically applied. Adequate supportive treatment and manipulative treatment must follow in these cases during the 5 to 10 days of hospitalization.

Massage is of value in many of these cases, but does not approach osteopathic manipulative treatment in providing relief.

Bed rest is of definite value in many cases. It is chiefly of only temporary value since it is not curative, merely giving symptomatic relief by avoiding spinal weight-bearing in the erect position.

Change of beds and mattresses or the placing of boards under the mattress helps greatly in many cases because it affords proper rest for the back with the spine in an unstrained position. As with bed rest, however, it is only one part of the management of this type of case.

Traction to the legs by adhesive tape Buck's extension or by other methods is much used with great relief in many cases. It is often used both before and after manipulation under general anesthesia. The traction should be applied to both legs and should be used for a minimum of 4 to 7 days. Some physicians prefer to keep the patient in full extension, others recommend flexion of the lumbar spine. Because of technicalities in the use of traction, one should become familiar with the method before using it. Cases in which myositis and fibrositis are factors generally respond well to this treatment.

Exercise is of much value in the management of chronic low-back pain, providing the physician can gain the full cooperation of the patient. Too many patients are not anxious to "go to the trouble" of carrying out the exercises. Many different exercises can be used, aimed chiefly at improving posture and strengthening spinal musculature. One of the leading old-school orthopedic surgeons advocating conservative care of all low-back problems, P. C. Williams,[2] uses exercises as the chief therapy in his cases.

Improvement of posture is of course basic in the management of these cases. Careful analysis and careful instruction of the patient are necessary if success is to be achieved.

For many years postural and structural imbalance has been considered by osteopathic physicians to be a prime etiologic factor in the production of backache. We have become proficient in the use of lift therapy, using standing pelvis x-rays as the basis for it. The many technicalities in the use of lifts make this a large

subject in itself. A basic general knowledge of mechanical principles and osteopathic principles is essential for the proper application of this therapy.

The correction of extremity lesions, especially those of the feet, is necessary in the management of low-back problems. The prescription of proper shoes and/or proper foot appliances will aid many patients.

Occupation and activity changes are of definite help in many cases. A rather thorough analysis of the patient's daily activity may be necessary to ascertain whether changes are necessary.

Occasionally a patient will improve if kept from weightbearing for a period by the use of crutches. However, a more positive type of treatment is more successful.

In the obese patient, or even one who is slightly overweight, the primary factor in the relief of backache may be weight reduction. If the situation is explained and an adequate program outlined, the patient will generally cooperate in reducing.

The use of heat affords relief in many low-back cases. It usually gives temporary relief and should be considered only one aspect of management. Moist heat seems to be of the most value. Diathermy aids many cases, but is not indicated routinely and is not as beneficial as many claim.

Electrotherapy is of more value in treating the chronic low back than most physicians realize. Galvanic and faradic current, and occasionally sine wave treatments, aid many cases of muscular and fascial involvement. This modality could be used to much better advantage than it is.

X-ray therapy is indicated in acute flare-ups of low-back pain, especially if lumbosacral arthritis is present.

Sclerotherapy is of value in tightening up hypermobile joints, especially the sacroiliac. However, most hypermobile sacroiliac joints are probably secondary to limited motion in the contralateral joint. Cases must be thoroughly analyzed before injections are begun. Many tend to over-rate sclerotherapy and many using this injection method are probably not getting the solution where they think they want it. The method should be used with caution.

The use of local anesthetics such as procaine affords reflex relief of pain and muscle spasm. It is of value in acute flare-ups, but it should not be used routinely. It may aid in breaking up a vicious cycle of osteopathic lesion pathology and pathological reflexes.

Closely related to the use of local anesthesia is the use of ethyl chloride spray.[3] It is easier to use and often provides more lasting relief than injections of procaine. One should read the literature regarding this method carefully or get a full demonstration before attempting its use, since it must be applied correctly to be of benefit.

Intravenous procaine helps in relieving acute pain, but, again, it should not be used routinely. It should be reserved for the acute case where one feels that the relief of pain for a period will be a prime factor in eventual recovery.

Medications are of value in treating the chronic low back, but must not be used to the exclusion of manipulative therapy; they should be used as an aid to manipulative therapy. A combination of physostigmine and atropine helps in cases where there is much muscle spasm, especially those presenting prearthritic changes and fibrositis. This type of case and often those presenting much arthritic change will respond to high dosages of vitamins B-complex and vitamin E. ACTH and cortisone are of course of value in the rheumatoid spondylitic case, but precautions must be observed in their use. Sedatives are of value and are probably not used sufficiently in general practice. These may range from salicylates to barbiturates and narcotics. Counterirritants are of value for symptomatic relief.

Psychological care is of importance in many cases, especially where compensation is involved. The physician must not make an invalid out of the patient. The aim must be to get him back on the job as soon as possible. Some cases definitely require psychosomatic therapy.

It is important to clean up foci of infection, no matter where they may be found. Studies and surveys indicate that many low-back conditions are definitely aggravated by foci of infection. Enough relief has been observed from removal of abscessed teeth, infected tonsils, et cetera, to indicate that no program of management is complete without the removal of foci of infection.

Systemic treatment must be given for anemia and other systemic diseases, since many of them either cause backache or influence of response to treatment of the low-back syndrome.

It must be borne in mind that backache may be caused by pathology other than that occurring in the low back. Cases have been observed wherein chronic low-back pain (even that simulating herniated intervertebral disk syndrome) has been caused by retrocecal appendix, ureteral stone, prostatic disease, cervicitis, and aortic aneurysm. These findings emphasize that the patient rather than the disease should be treated primarily.

Methods of support to the chronic low back have a wide range of usefulness. Strapping with adhesive tape often provides temporary relief. Sacroiliac belts are of some value, but give little actual support. They are over-rated and most cases would benefit from more adequate support. Corsets are of much value, especially on female patients. However, they must be well fitted and are best made-to-order. A stock support seldom fits properly without alteration. They should provide sufficient support posteriorly to limit motion in the lumbosacral area.

Numerous braces have been designed for the low back. The most familiar is the Taylor brace. This chiefly limits anterior-posterior motion and affords support for most of the lumbar and dorsal spine. It consists of a pelvic band and two steel uprights posteriorly, shoulder straps, and an apron in front. The Knight brace has two lateral steel uprights and is used to limit lateral motion. There are many combinations of these two basic braces. It should be pointed out that sacral rings, or butterflies, are necessary for support of the sacroiliac areas. The straight pelvic band does not give support in this area. It has been found that most cases get the best support from a low-back brace of the chairback type. Variations are the Goldthwait, Bennett, and Magnuson braces. The Williams brace is designed to limit lumbosacral

extension and keep this area in flexion; it has been shown to be of value in the herniated disk syndrome.

Rufus Alldredge presents a number of specifications for the proper use of braces.[4] The patient should be known and also his age, height and weight, occupation, and social status. It should be known whether the brace is for temporary or permanent use and the psychological aspects of wearing a brace should be considered. The specific function of the particular brace and the complicating factors in the particular patient must be kept in mind. Measurements must be accurate and the brace must be well-fitted. If the brace is not comfortable, it is not properly fitted. This last point should be emphasized. The emphasis on the use of braces for the chronic low-back syndrome is summarized by Roberts[5] as follows: "Since the generally expressed opinion is that these low back troubles are a result of our adopting the erect posture, the main purpose of treatment, apart from relieving symptoms, should be to strengthen the vulnerable parts of the spinal structure." In using braces the patient must be shown the correct application, use, and care of the brace, if we are to expect good results from its use.

Body casts are often of temporary use in the chronic low-back pain, generally until a brace can be obtained. The flexion body cast has been used somewhat extensively in the care of the herniated intervertebral disk syndrome.

The physician has the above methods of therapy to choose from in setting up the management of a particular case of chronic low-back pain. Not all methods can be used on all patients. A combination of two or more methods is desirable. We should use everything which will benefit the patient. Many of these cases require extensive and concentrated treatment using several types of treatment; some will require surgery. All low-back pain is not due to herniated disks as some claim, and far too many patients are submitted to surgery for this condition with unsatisfactory results. Barr[6] states, "A number of observers have commented on the fact that disc excision is not a satisfactory method of treating back pain, and that the operation should be reserved for patients with intractable sciatica."

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PHYSICAL TREATMENT OF COMMON DISORDERS OF THE FEET

Physical therapy should be used to accomplish a particular result. For this reason, when disorders of the feet are to be treated, a clear knowledge of the etiologic aspects of the condition is needed, and the plain of treatment should have a logical reason.

For many years there have been lists of exercises described with the general idea of strengthening the feet. In a vague sort of way, painful feet have been considered weak feet, and exercises have been prescribed to strengthen them. Needless to say, exercises can be done for only a small part of each day; yet the patient is probably forced to bear weight many hours of that day. The muscles of the feet cannot be weaker than muscles elsewhere in the body, so that there is no reason for planning strengthening exercises of the feet alone.

The diagnosis of the fundamental cause of the disorder must be made by careful clinical examination and by roentgen examination. No final program should be planned without making as complete a study as possible in order to be sure of the underlying cause.—Frances Baker, M.D., *Journal of the American Medical Association*, April 16, 1951.

Current Medical Literature

CORTISONE IN TREATMENT OF BRONCHIAL ASTHMA

Intramuscular injections of cortisone were given to 20 patients with intractable bronchial asthma to see what possibilities the preparation offered in the therapeutic management of this disease. The results are reported by Marvin S. Harris, M.D., in the August, 1951, issue of *California Medicine*.

Five different methods of treatment were employed in this study. Group 1, consisting of 4 patients, received 1 week of intensive therapy followed by retreatment in the same manner when relapse occurred. Group 2, consisting of 7 patients, was given 1 week of intensive therapy followed by decreasing low-level maintenance therapy. Group 3, consisting of 4 patients from group 2, received alternating doses of ACTH and maintenance doses of cortisone in an attempt at tapering off. Group 4, consisting of 9 patients, 3 of whom were from other groups, was treated with 1 week of intensive therapy followed by high-level maintenance therapy for periods ranging from 4 to 6 weeks. Group 5, consisting of 3 patients, was given midlevel therapy throughout the course of treatment.

The following results were obtained: A high level—usually totaling more than 200 mg. per day at the beginning—dosage of cortisone will result in rapid improvement within 4 or 5 days. Usually relapse will occur in about 8 days if treatment is discontinued after the first week. By administering 100 mg. maintenance doses of cortisone two or three times weekly following intensive treatment, relapse may be delayed for a period of from 20 to 30 days. The use of ACTH in conjunction with cortisone therapy apparently has no value in preventing relapse.

The effect of cortisone therapy upon the adrenocortical function, the endocrine system in general, and other phases of body metabolism affected by this hormone could not be determined in this study because treatment was not continued long enough to produce irreversible changes. At the time of writing, however, the author had found no evidence of irreversible changes.

As a result of this study the author concludes that cortisone is extremely useful in controlling extended periods of bronchial asthma intractable to other forms of therapy; particularly will it be useful in temporarily controlling asthma during medical and surgical emergencies. However, cortisone therapy does not effect sufficient change in the basic pattern of the disease to allow discontinuance of therapy without some degree of almost immediate relapse. The author suggests that during periods of remission other forms of therapy of a more definitive nature be instituted.

COLLES' FRACTURE

A Method of Maintaining Reduction

In the November, 1951, issue of *California Medicine*, Lewis Cozen, M.D., describes a unique method for treating Colles' fracture by wedging the cast. Twenty-three selected patients with displaced Colles' fracture were treated by this method with satisfactory functional and cosmetic results.

Successful treatment of Colles' fracture depends upon adequate reduction, maintenance of reduction until solid bony union is obtained, and free movement of hand and shoulder joints throughout treatment. To achieve these results the following technic was developed. After reduction of the fracture a double thickness of inch-wide sheet wadding is wrapped around the wrist at the site of the fracture. A posterior splint consisting of about four layers of wet plaster of paris is then applied to the back of the forearm from the metacarpophalangeal joints to the elbow; the wrist is maintained in the position of correction until the plaster hardens with a flannel bandage fixing the splint to the arm. Plaster of paris is applied over the flannel bandage and the elbow joint is immobilized by additional plaster bandages. As soon as the arm is properly splinted, lateral and anteroposterior x-rays are taken. The patient is told that early motion of the finger and shoulder joints is desirable and that undue pain or swelling should be reported immediately.

Two or three days after standard reduction is instituted, the cast is cut circularly at the level of the fracture, leaving a small bridge of plaster on the volar and ulnar borders of the wrist. Into the aperture on the radial side of the cast are wedged small pieces of wood—the author suggests pieces of tongue depressors—which are fixed in place by several thicknesses of adhesive plaster. Roentgenograms are again made laterally and anteroposteriorly and if the position is satisfactory plaster of paris is applied to the adhesive plaster. This wedged cast is left on the patient for between 4 and 5 weeks after which it is replaced by a short posterior skin-tight plaster splint. This second splint is worn for another 3 or 4 weeks.

The author attributes the following advantages to this method of treating Colles' fracture: (1) Wedging may overcome minimal amounts of deformity not reduced primarily; (2) it almost always prevents recurrence of the deformity in the cast; and (3) it does away with the necessity for skeletal traction except in extremely comminuted and disorganized fractured cases. Also, the author points out, plaster casts can be maintained long enough for correction, the stiffness which may result being more easily corrected than a bony deformity. It must be remembered that experience in nonpadded technics is a must for this type of casting. Frequent x-ray studies and frequent observation of the patient's hand and arm are also necessary.

CHRONIC AMEBIASIS: A COMMON DISEASE

Amebiasis is one of the most common chronic diseases prevalent in the United States today according to Robert G. Lehman, M.D., and Leonard R. Thompson, M.D., who report their experience with 238 cases of the disease in the September, 1951, *Annals of Western Medicine and Surgery*.

Endameba histolytica is usually ingested during the cystic stage. The infection which results from penetration of the mucosa by the liberated trophozoites is localized primarily in the colon. Contrary to prevalent belief, many infected persons do not have diarrhea but exhibit milder symptoms which are usually attributed to other causes. For purposes of accurate diagnosis the authors report a simple clinical classification: (1) symptomless cyst-passers or carriers, (2) those with indefinite gastrointestinal and neurologic complaints, (3) those with the above symptoms plus recurrent diarrhea, (4) those with acute or chronic dysentery, and (5) those with hepatic abscess or other complications. Diagnosis is not difficult for classes 3, 4, and 5; misdiagnosis is frequent in classes 1 and 2. It is with the first two groups that the authors are primarily concerned.

The symptomatology of chronic amebiasis may include periodic abdominal pain which may be either acute or chronic; headache; drowsiness or, conversely, disturbed sleep; faulty memory; nervous instability; myalgia and legache; arrhythmias; vasomotor symptoms; and tachycardia and palpitation. Symptoms involving the gastrointestinal tract frequently lead to a misdiagnosis of chronic appendicitis, cholelithiasis, irritable colon, or peptic ulcer. Psychoneurosis is sometimes the diagnosis suggested by infected patients exhibiting neuromuscular symptoms. Although cases have been reported by other investigators, the authors do not believe that circulatory

irregularities are particularly outstanding symptoms in chronic amebiasis.

The physician's awareness of the possibility of chronic amebiasis as well as his awareness of the clinical disguises which the disease can assume are of prime importance in diagnosing this disease. Also, the authors state, diagnosis of amebiasis is a laboratory procedure. When routine examination of the feces becomes part of every physical examination, more cases of amebiasis will be discovered and accurately diagnosed.

STEATORRHEA FOLLOWING THE USE OF ANTIBIOTICS

In the August 30, 1951, *New England Journal of Medicine*, Reuben R. Merliss, M.D., and Arthur Hoffman, M.D., report four cases of prolonged diarrhea following the use of aureomycin and chloramphenicol, and of penicillin in conjunction with sulfonamides. They point out that terramycin has also been known to cause diarrhea. On the basis of their study they conclude that diarrhea with steatorrhea following antibiotic therapy is probably the result of a deficiency state due to the destruction by the antibiotics of normal intestinal flora.

The etiologic relationship between prolonged diarrhea and certain antibiotics seems clearly indicated in these and other cases. The antibiotic agent may be aureomycin, chloramphenicol, or terramycin and the range of bacterial destruction seems to be the key to the syndrome under discussion. Penicillin, the sulfonamides, and streptomycin—all relatively ineffective against the most common forms of intestinal bacteria—do not cause diarrhea when used alone. However, when penicillin was given in conjunction with sulfonamides, prolonged diarrhea resulted. Furthermore, the response of this syndrome to liver injection and vitamin B therapy is indicative. It is well known that certain of the B complex vitamins, folic acid among them, are produced by bacterial activity in the gastrointestinal tract. Deficiency of these vitamins would seem to indicate a deficiency in the vitamin-producing bacteria due, the authors believe, to destruction of the bacteria by the antibiotics.

As indicated by the presence of steatorrhea, the tendency of fat ingestion to aggravate the diarrhea, and the relatively mild nature of the diarrhea, the small bowel is undoubtedly the seat of the diarrhea. X-ray studies of three of the patients in this series clearly indicate this to be the case. Moreover, the similarity between this syndrome and acute tropical sprue is clearly apparent; only the nutritional deficiency aspects of the latter disease are missing and even these may be found if the condition is allowed to continue untreated as may be the case in ulcerative colitis (which is usually treated by prolonged antibiotic administration) in which instance the sprue syndrome would be difficult to differentiate from the primary ailment.

The authors suggest that administration throughout the course of antibiotic treatment of parenterally injected liver plus orally administered B vitamins will probably prevent diarrhea. They also emphasize that new drugs should not be used indiscriminately on insignificant ailments. The side effects may prove to be more dangerous than the original ailment.

COMPARATIVE CLINICAL EFFECTIVENESS OF COUGH MEDICINE

Expectorants are probably the most used and least understood drugs on the market today. Many physicians consider them of doubtful value; others continue to use them because they have proved at least partially effective in relieving cough. In an effort to determine statistically the effectiveness of three expectorant drugs, Leo J. Cass, M.D., and William S. Frederik, M.D., made a study in which the drugs were administered to 52 institutionalized tubercular patients. Their findings appear in the October, 1951, issue of *American Practitioner*.

The three drugs used were glyceryl guaiacolate (Robitussin), terpin hydrate, and ammonium chloride. Aromatic syrup was used as a placebo and also as the vehicle for the other preparations. The study lasted over a 31-day period during which each of the three drugs and the placebo were given for 7 consecutive days followed by a day of rest. In order to compare and evaluate the three preparations observations were made based on (1) the occurrence of side-effects, (2) the frequency and severity of the cough, (3) the volume and type of sputum, (4) the observer's opinion of effectiveness, (5) the patient's opinion of effectiveness, and (6) the patient's taste preference. The subjective opinions of observer and patient were indicated by five scale values ranging from markedly favorable response to markedly unfavorable response.

The results of this study showed that the glyceryl guaiacolate preparation (Robitussin) was found to be superior to the other preparations in all important categories: It had no appreciable side-effects, it was rated slightly favorable in reducing cough frequency (rating 2—slightly favorable response—was the highest rating given any drug in any category by any patient), it ranked second to the placebo in taste preference, and it was considered by the largest percentage of patients and observers to be the most beneficial of the three preparations. Terpin hydrate was also liked fairly well by the patients and was considered of value but it did not approach Robitussin in effectiveness. Ammonium chloride was distasteful to most patients and produced serious side reactions in a few. The authors conclude that the greater effectiveness and patient-acceptance of Robitussin is closely related to its marked activity in increasing respiratory tract secretions.

ENVIRONMENTAL HEALTH

The Public Health Service, Federal Security Agency, on November 4 announced publication of "Environment and Health," the first book in the Service's 153-year history dealing comprehensively with environmental health.

"The modern concept of health is not simply freedom from suffering but the positive enjoyment of life in wholesome surroundings," it was pointed out by Mark D. Hollis, Assistant Surgeon General and Chief Engineer Officer of the Public Health Service.

"Public health practice today has achieved effective control of most communicable disease, thanks to sanitation, bacteriology, and antibiotics," Mr. Hollis continued.

"The future of public health practice, apart from keeping a tight sanitary defense against disease outbreaks, moves in the direction of overcoming metabolic and geriatric problems and improving the environment of all persons.

"In keeping with modern health principles," Mr. Hollis explained, "the emphasis in 'Environment and Health' is on the need for positive health rather than treatment of sickness, prevention rather than cure of disease, and public rather than personal and individual well-being."

Environmental tasks in public health which are reviewed in the book include: control of water and atmospheric pollution; improvements in the sanitary control of food and milk and in sanitary facilities for water supply and sewage disposal in rural and substandard urban areas; measures to reduce home accidents and protect the health of men and women in the factory and the office; reduction of dental decay in children through fluoridation of public water supplies; modernization of refuse disposal systems; health problems of advancing chemical technology; achieving effective control of rats, flies, mosquitoes, ticks, and other disease-bearing pests and parasites.

The book discusses health measures applied to the natural environment: water, air, food, and the various forms of animals and plant life which affect public health. The man-made environment—environment of the home, the school, the working place, the park, swimming pool, and playground—is

discussed, along with health aspects of man-made radiations. The final chapters deal with administration of environmental health programs and research. A chapter on environmental health deals specifically with new trends and developments.

"Advances in environmental health can be attributed to many forces," Mr. Hollis said. "Not only to official and professional health activities—Federal, State, and local—but also to industrial and social trends."

A limited edition of "Environment and Health" has been published for distribution to health departments, sanitary engineers, schools of public health, and other professional audiences. The book is intended to serve both as a review of environmental health of the times and as a textbook for students of public health. Copies are available from the Superintendent of Documents, Government Printing Office, Washington 25, D. C., at 75c each.

Book Notices

ROENTGEN ANATOMY. By David Steel, M.D., St. John's Hospital and Evangelical Deaconess Hospital, Cleveland, Ohio. Cloth. Pp. 109, with illustrations. Price $8.00. Charles C Thomas, 301 E. Lawrence Ave., Springfield, Ill., 1951.

Radiologists who have sought quick identification of anatomical landmarks, translating roentgen shadows into recognizable forms, know the sense of frustration and time consumption involved in consulting numerous texts, too often to no avail. They, as well as the referring physician or the specialist who wishes to see what the radiologist describes, will appreciate the practicability of this ready atlas of reference in which the clearly reproduced roentgenogram is correlated with a diagram that appears on the opposite page—numbers on the diagram correspond with the various shadows and structures as seen in the film. The book will be especially useful to individuals who need to master the fundamentals of roentgen anatomy—residents, physicians in smaller centers to whom radiology is not a full-time specialty, and the surgeon in small institutions who all too often must serve as his own radiologist.

The text has been dedicated by the author to his revered teacher, the man who early set the high standards of American roentgenology, George W. Holmes, with the worthy hope that as greater technical skill is achieved, "a standard of roentgen anatomy will be reached similar to that already realized in gross anatomy."

This could readily become a standard book of reference for the South American Continent, as well as the North American, since the right-hand page gives the Spanish translation of the English text on the left-hand page. There are 108 full-page plates. This atlas is highly recommended to those individuals who are satisfied with nothing less than accurate and precise knowledge made readily available. The book itself conforms to the high standards of its publisher.

SCOLIOSIS Pathology, Etiology, and Treatment. By Samuel Kleinberg, M.D., Attending Orthopaedic Surgeon, Hospital for Joint Diseases; Consulting Orthopaedic Surgeon, Lebanon Hospital, Maimonides Hospital, Hospital for Special Surgery, New York City; Lecturer in Orthopaedics, New York University Medical School; Member, American Orthopaedic Association; Member, American Academy of Orthopaedic Surgery; Fellow, American College of Surgeons; Fellow, New York Academy of Medicine; Member, American Academy of Compensation Medicine. Cloth. Pp. 286, with illustrations. Price $7.50. The Williams & Wilkins Company, Mt. Royal & Guilford Aves., Baltimore, 1951.

Scoliosis has long been of special interest to osteopathic physicians, both because of its nature and because they have been frequently consulted by parents of children or by adults so afflicted. Many doctors who found Kleinberg's first book of great value will want this revision which has become, not a second edition, but a new monograph on the anatomy, pathology, etiology, and treatment of scoliosis.

The pathogenesis of the disease is essentially unchanged but the newer knowledge of its etiology has made possible modifications of its treatment and great changes in its management. The author calls attention to the fact that the therapy of this condition is time consuming and that its proper care is not only a matter of the medical knowledge but of proper temperament upon the part of the attending physician.

A careful study of this text will furnish the doctor with a background of the best orthopedic literature available, equip him with the differential knowledge necessary to classify his cases—those which he may well undertake himself and those which he should refer to orthopedic specialists of our school of practice, if available, or of old-school medicine. And the referring doctor will have the information necessary to judge the worth of his consultant—basic information that should be part of the equipment of every general practitioner in relation to all specialties.

THE MANAGEMENT OF FRACTURES, DISLOCATIONS, AND SPRAINS. By John Albert Key, B.S., M.D., St. Louis, Missouri, Clinical Professor of Orthopedic Surgery, Washington University School of Medicine; Associate Surgeon, Barnes, Children's, and Jewish Hospitals, and H. Earle Conwell, M.D., F.A.C.S., St. Birmingham, Alabama, Associate Professor of Orthopaedic Surgery, University of Alabama School of Medicine; Chief of the Orthopaedic Service, South Highland Infirmary; Consulting Orthopaedic Surgeon to Carraway Methodist Hospital and Baptist Hospitals; Attending Orthopaedic Surgeon, Children's Hospital, Jefferson-Hillman Hospital, East End Memorial Hospital, and Vincent's Hospital, Birmingham, Alabama. Ed. 5. Cloth. Pp. 1232, with illustrations. Price $16.00. C. V. Mosby Company, 3207 Washington Blvd., St. Louis 3, 1951.

Little is needed to recommend this book other than to announce the appearance of a new edition. The previous four editions which appeared over a period of 12 years, the last 5 years ago, provide sufficient guarantee of the quality and worth of this text.

In the preface to the first edition the authors stated that it was not their belief that the time would come when all fractures would be treated by specialists, but it was their belief that every general practitioner should know the best form of emergency treatment and be able to recognize the possibility of complications and deformities. They therefore described the methods which they had used and found reliable. Their aim to furnish a practical working guide for the management of fractures, dislocations, and sprains was realized as the years have proved.

In this new fifth edition many illustrations have been deleted and many sections have been condensed, but the bulk of

the book has been reduced little because many new illustrations have been added and much new material has been introduced, so much that the entire book had to be reset.

CONGENITAL DISLOCATION OF THE HIP. By Julius Hass, M.D., New York City. Cloth. Pp. 405, with illustrations. Price $12.50. Charles C Thomas, Publisher, 301 E. Lawrence Ave., Springfield, Ill., 1951.

This treatise appraises the recent theories and methods of therapy of congenital dislocation of the hip and clarifies some of the pending problems in etiology and pathology. It is based on more than 2,000 cases treated at the Orthopedic University Clinic of Vienna and in New York City. The author's long association with Adolf Lorenz served as a helpful foundation for this work.

Hass emphasizes that congenital dislocation of the hip is not truly congenital, that only the disposition is really congenital. Dislocation can be prevented if diagnosis of the disposition is made during the first year of life. These facts are of importance to the physicians who see the child first—the pediatrician and the general practitioner.

The best methods of treatment are considered, the advantages and disadvantages of open and closed reduction are discussed, a progressive viewpoint on the use of an effective prophylaxis is presented, and an estimation is made of the efficacy of various plans of after-treatment.

Most of the illustrations were prepared especially for this book and they demonstrate clearly the normal and abnormal morphology of the hip joints. The attention given to the legends results in a complete story in picture form.

The book is worthwhile and will serve to clear up much of the mystery that has surrounded the origin of this condition, its unpredictable course, and the uncertainty of the outcome of therapy.

ARTHRITIS AND THE RHEUMATIC DISEASES. By Philip Lewin, F.A.C.S., F.I.C.S., Professor and Chairman of the Department of Bone and Joint Surgery, Northwestern University Medical School; Professor of Orthopedic Surgery, Cook County Graduate School of Medicine; Senior Attending Orthopedic Surgeon and Chairman of Department, Michael Reese Hospital; Attending Orthopedic Surgeon, Cook County Hospital, Chicago. Cloth. Pp. 175. Price $3.50. McGraw-Hill Book Company, Inc., 330 W. 42nd St., New York 18, 1951.

This informative book was written by a distinguished authority for patients and other nonprofessionals interested in arthritis and the rheumatic diseases. In it he discusses the whole family of diseases commonly known under the catchall term "rheumatism."

Cortisone and ACTH are discussed and attention is drawn to the unparalleled relief they have brought to many, but warning is given that their long-run effects are as yet undetermined. Along with the endocrine therapy represented by ACTH and cortisone, four other types of treatment now used are outlined. They are chemotherapy (gold and sulfur), vaccine or serum therapy, orthopedic surgery, and physical therapy.

In the section devoted to physical therapy there are slightly more than two pages on manipulation. In introducing this subject Dr. Lewin remarks, "Until a few years ago, the medical profession was dubious of the wisdom of manipulating bones and joints. But for a few orthopedists, they left manipulation as the exclusive preserve of the osteopaths and chiropractics. . ." He continues, "At present it [manipulation] is a respected and valuable part of physical medicine. . . . As medical skill in manipulation increases, surgical operations in which structures are actually cut are growing rarer and used only as a last resort." What Dr. Lewin fails to remark is that osteopathic physicians have and have had the skills developed in the profession over more than half a century, during which their applications of manipulative therapy have brought relief to countless thousands.

There is much of value in the book and any arthritic who reads it with understanding will make a better patient. It will be easier for his physician to help him keep his disease under control, prevent deformities, and maintain hope of recovery.

BONE AND JOINT DISEASES: Pathology Correlated With Roentgenological and Clinical Features. By J. Vernon Luck, M.S. (Ortho.), M.D., F.A.C.S., F.I.C.S., Assistant Clinical Professor of Orthopedic Surgery, University of Southern California. Senior Attending Physician, Department of Orthopedic Surgery, and Consultant in Orthopedic Pathology, Los Angeles County Hospital. Member, Subcommittee in Orthopedic Surgery, National Research Council, Member, Board of Associate Editors, Journal of Bone and Joint Surgery. Ed. 1. Cloth. Pp. 614, with illustrations. Price $16.50. Charles C Thomas, Publisher, 301-327 East Lawrence Avenue, Springfield, Ill., 1950.

According to the preface this book was 10 years in preparation. The results seem to justify the time and the effort involved. Written primarily for the clinician and the practicing pathologist, it presents clearly and systematically the essentials of each subject, but omits the numerous minute details principally of interest to researchers.

In this complete treatise on applied physiology and pathology the pathologist, surgeon, roentgenologist, internist, or general practitioner will promptly find the answers to the majority of his questions concerning the roentgenology, pathology, and physiology of the skeletal system. There has been an urgent need for correlation of these aspects of bone diseases and this book was written with that need in mind. Emphasis is placed on the "dynamic quality of pathologic events" and on the fact that "disease is not a *thing*, but a *process*." This type of thinking fits well into the osteopathic concept and into the practical application of osteopathic manipulative therapy.

There are special chapters on normal anatomy and physiology of the bones and joints, infections, avascular necrosis, healing of fractures, the arthritides, skeletal changes in vitamin deficiencies, fibrocystic diseases, congenitally defective ossification, and bone tumors. Many bone and joint diseases are too rare to permit the average physician to acquire wide personal experience with them, but Dr. Luck's vast experience and unusual opportunities of observation have made it possible for him to discuss seldom encountered entities in a manner which will provide needed help when such entities are met.

Recent advances concerning reaction of joints to trauma, hyperparathyroidism and accompanying bone changes, endocrine disturbances of the skeletal system, adenocarcinoma of the prostate with skeletal metastases, synovioma, and many other subjects are covered.

The quality of the paper, printing, and illustrations is superb, adding pleasure to the profit of reading a book whose content is worthwhile, practical, and enriching.

TRENDS IN GERONTOLOGY. By Nathan W. Shock, Chief, Section on Gerontology, National Heart Institute, National Institutes of Health, and The Baltimore City Hospitals. Cloth. Pp. 153, with illustrations. Price $2.50. Stanford University Press, Stanford, Calif., 1951.

An increasing number of physicians are becoming interested in the newest development in medical science and internal medicine's growing field, that of geriatrics. To become a successful geriatrician, however, involves a knowledge of the wider field of gerontology itself, which is a scientific study of the phenomena of aging rather than the study of the medical and pathological problems of older individuals which is strictly geriatrics.

It is with the idea that he who knows geriatrics must view it in its wider aspects that Stanford University has brought out this volume by an authority in the field. To this book the physician interested in the problems of his aging practice can now turn, for practices age as well as the physician, confident that in this small volume he will find the information necessary to acquire a basic knowledge of every aspect of aging, as it affects both the individual and the community in which he lives.

The author presents this knowledge by discussing trends—in population, in employment, in income maintenance and retirement, in community programs for the aged. For the geriatrician there are two chapters of special interest—trends in research and research potentials in aging.

The text is recommended reading for the practitioner who would prepare himself for an inevitable tomorrow, both as an individual and as one who would serve his community in his capacity as its physician.

PHYSICAL MEDICINE AND REHABILITATION FOR THE CLINICIAN. Edited by Frank H. Krusen, M.D. Cloth. Pp. 371, with illustrations. Price $6.50. W. B. Saunders Company, West Washington Square, Philadelphia, 1951.

This textbook has grown out of a series of lectures on physical medicine and rehabilitation prepared for the American College of Physicians. It is designed to acquaint the clinician with the scope of medicine's newest specialty, physical medicine, and its newest specialist, the physiatrist. It is edited by Frank Krusen, well-known head of the Section on Physical Medicine of The Mayo Clinic and the chairman, until its dismissal, of the Baruch Committee on Physical Medicine. Twenty-four contributors, several of them recognized specialists in their respective fields and all of them either from university centers of physical medicine or from the Mayo Clinic and Foundation, have prepared the material for the thirty-nine chapters.

The book is divided into four major sections and contains considerable material on the basic principles of physical therapy. In the practical application of treatment it is more satisfactory in its discussion of electrically generated modalities and much less satisfactory in its attempt to assay the role of manipulative therapy, as evidenced in the chapter "The Clinician Approaches the Problem of Backache."

The text forms an interesting contrast to a book by an English author recently reviewed in this section and serves to emphasize the point made in that review, that English medicine is far ahead both in concept and application of the place of physical medicine in therapy. Nevertheless, this is an important book in that it serves to emphasize that the role of physical medicine is being rapidly developed in this country, and that these are aspects of physical medicine which have been too long neglected by the osteopathic profession. Secure in our authoritative role in the field of manipulative therapy we can ill-afford as a profession to neglect the wider ramifications of the entire field of physical medicine.

This book should be read by our orthopedists, as well as our internists, neurologists, and psychiatrists. It will be a good antidote for the tendency of our hospitals to emphasize largely their purely surgical and neglect their medical aspects, especially the therapy now termed physical medicine.

MAN: Mind or Matter? By Charles Mayer. Cloth. Pp. 168. Price $2.50. The Beacon Press, 25 Beacon St., Boston 8, 1951.

Philosophy is not in the tradition of American doctors or scientists, who seldom read or think philosophically, much less write about it, although upon occasion they have so written, witness a little book by Aldred Scott Warthin, famed pathologist, entitled "A Biologist's Creed," or his classic, "The Physician and the Dance of Death." Then there was Alexis Carrel's "Man, the Unknown," but he was a native of France.

Mayer's small book would make a good beginning for the doctor who is interested in the why and whither of life. The author of this book is a distinguished French physicist and biochemist who postulates a philosophy exactly the opposite of that of Lecomte du Noüy whose "Human Destiny" became well known in America several years ago. Mayer is frankly materialistic, not in the Marxian sense to which he devotes a critique of one chapter, nor in that of the mechanical materialists of the late 18th century. He is in the tradition of the great humanists of the past and of today who forever fight against those superstitions, prejudices, and privileges that tend to enslave rather than uplift the human spirit.

The book could be reviewed critically in the light of acceptable subjective thinking of today that has a scientific basis, but rather it should be appraised for its true worth—a stimulating study of the impact of modern science upon dogma, with the resulting outgrowth of a positive philosophy of life, which if not Christian in outlook, turns to the same ideals and virtues as a reasonable and proper way of life.

Why should such a book interest a physician? Because the doctor deals with the great imponderables—birth and life and death—which have always been of interest to the great doctors of all time.

FROM A DOCTOR'S HEART. By Eugene F. Snyder, M.D. Cloth. Pp. 251, with illustrations. Price $3.75. Philosophical Library, Inc., 15 East 40th St., New York, 1951.

This book has been written for the lay reader by a general practitioner who has had a heart attack, but it can be read with great profit by any doctor. That its introduction was written by Paul D. White is in itself sufficient to indicate it is no ordinary comment upon life. Such a story could not have come out of the experiences of a native-born American. The author who was born in Europe and educated there was subjected to suffering of mind and body from which we, both as individuals and as a people, have been free thus far. Transplanted to the United States, he had scarcely adjusted himself to his new way of life when he became a coronary victim.

By the device of interfamily conversation the author initiates the reader into a knowledge of the common threat to the health of the middle aged—heart disease and how to meet it. But he does more than that for he shows how he met such a problem wisely and successfully, not only as an individual but as a member of the society of his time. The book in itself is a tribute to the fine quality of the human spirit. No native American can rise from its reading without a sense of humility, a broadened horizon, and a new hope for living.

THE ORGANIZATION OF BONES. By P. Lacroix, Professor in the Faculty of Medicine, University of Louvain. Cloth. Pp. 235, with illustrations. Price $6.00. The Blakiston Company, 1012 Walnut St., Philadelphia 5, 1951.

This book is an English translation of a well-known French text written by a distinguished scientist. In his introduction he explains that this monograph is not a chapter from a textbook but an essay in which he has collected, shortening or expanding according to need, his articles on the dynamics of skeletal development. This explanation helps to clarify the meaning of the title which may puzzle the English-speaking reader.

Devoted to the problems met in the study of the structure of the bones, this excellent reference book reports findings made by microscope, x-ray, and biochemical analysis, it dis-

cusses the structure of long bones, the growth of marrow and periosteum, the origin of the perichondral disk, re-establishment of cartilage growth after amputation, and other topics of current interest.

MANUAL THERAPY. By James B. Mennell, M.A., M.D., B.C., (Cantab.), Consulting Physician in Physical Medicine, St. Thomas's Hospital, Vice-President and Hon. Fellow, Chartered Society of Physiotherapy, London, England, Gold Key of the American Congress of Physical Medicine, Gold Key of the American Physical Therapy Association, Honorary Life Member of the Netherlands Physical Therapy Association. Paper. Pp. 64. Price $2.25. Charles C Thomas, Publisher, 301-327 E. Lawrence Ave., Springfield, Ill., 1951.

Osteopathy in this little volume is placed in the historic tradition of bonesetters by its English author who is a well-known exponent of physical medicine. The author shows no evidence, however, of any knowledge of the osteopathic concept of medicine but he presents a brief and valuable exposition of the place of massage in old-school medicine. As such, osteopathic physicians will find the monograph useful; all too often osteopathic practitioners know little of the role of massage in therapy.

In Chapter 3 Mennell describes the physiological requisites of passive movement which he would wisely rename "relaxed movement." It is a valuable chapter. Joint manipulation is discussed in Chapter 6 and illustrates perfectly the paucity of knowledge of osteopathy exhibited by doctors of physical medicine merely by its omissions. The role of manipulation of spinal joints does not appear to enter into the author's thinking.

This is one of a series of small monographs that exhibit the meticulous attention of a publisher to whom the manufacturing of books is an art. It can be read at a sitting. It would be of interest to the osteopathic physician who is a student of all phases of medical knowledge.

INHALATION ANESTHESIA. By Arthur E. Guedel, M.D., Associate Clinical Professor of Surgery (Emeritus) University of Southern California School of Medicine. Ed. 2. Cloth. Pp. 143, with illustrations. Price $3.75. The Macmillan Company, 60 Fifth Ave., New York 11, 1951.

While this is not a book for the anesthesiologist it is, as was the first edition, a small manual of considerable value to the osteopathic physician who is called upon to give inhalation anesthesia. Its treatment of ether anesthesia is excellent and the volume can be strongly recommended to anesthetists in our smaller institutions who should not attempt the employment of other than this one agent unless they are well qualified. The signs of ether anesthesia are clearly worked out.

Chloroform and ethyl chloride are mentioned but there is no warning that the former has no place in modern anesthesia and the latter, if used at all, should be only employed by an anesthesiologist. Cyclopropane is given three brief paragraphs, again without warning that its administration is only for the skilled. The employment of nitrous oxide as an anesthetic agent is inadequately described.

The illustrative cases cited are excellent, but there are no references to the problems of cardiac arrest such as are now being presented in both professional and lay literature.

This excellent little manual on ether administration will be of real usefulness to the osteopathic physician who acts as an anesthetist but who is not a specialist in anesthesia.

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711 MEDICAL MAXIMS. By William S. Reveno, M.D., Assistant Professor of Clinical Medicine, Wayne University Medical College; Attending Physician, Harper Hospital; Consulting Physician, Detroit Receiving and Highland Park General Hospitals, Detroit, Michigan. Cloth. Pp. 197. Price $3.75. Charles C Thomas, Publisher, 301 E. Lawrence Ave., Springfield, Ill.

To the booklover this little volume is a delight. Its binding is lovely, its format quite perfect, and its typography is consistent with its entire design. To the busy physician who is forced to think of esthetics secondarily, it can be an eminently practical thing in that it does precisely what it set out to do: makes available a large number of medical aphorisms, which, if they do not possess the colorfulness and pungency of those that have come down through centuries, do empitomize in epigrammatic brevity facts of modern medical knowledge. For example, under "Infections": "Paralytic poliomyelitis is exceedingly rare in children under two." "Newborn babies may develop pneumonitis if the mother has an upper respiratory infection at delivery." Under "Respiratory Tract": "Hoarseness of more than two weeks' duration calls for laryngeal examination." "If congestive heart failure can be ruled out, 95 per cent of hemorrhagic pleural effusions are due to a malignant process, either carcinoma or lymphoblastoma." Under "Circulation": "In the elderly, slowing of the mental processes, inability to work and manifest character changes with loss of memory, indicate cerebrovascular damage." "Anoxia begets anoxia." Under "Genito-Urinary Tract": "Fifteen per cent of women develop endometriosis during active menstrual life. One fourth of these develop metastatic lesions in the rectosigmoid." "Symptoms due to endometriosis may be alleviated by injections of androgens." "An over-distended urinary bladder may bleed when emptied rapidly."

These maxims selected at random illustrate the excellence of all 711. The publisher alone is sufficient guarantee of their accuracy but the author is a physician of repute.

PLANNING FOOD FOR INSTITUTIONS. Agricultural Handbook No. 16. By Rosalind C. Lifquist and Edith B. Tate, Bureau of Human Nutrition and Home Economics, Agricultural Research Administration, United States Department of Agriculture. Paper. Pp. 95. Price 45c. Superintendent of Documents, U. S. Government Printing Office, Washington 25, D. C., 1951.

The purpose of this handbook is stated clearly in the foreword: "The publication is designed primarily for nutritionists and others who are called upon to help food managers and administrators plan adequate diets within their money allowances." To guarantee up-to-date information, a study was made of the current food purchase records of a number of Maryland institutions and of a general hospital in Washington, D. C. Reports on current practices in group feeding elsewhere were also studied before a preliminary edition was written and released. This preliminary edition was then sent to various persons and institutions throughout the country for comment and criticism. As far as possible, all suggestions relating to the planning and purchasing of food were incorporated into the present edition.

In addition to an introductory chapter on nutrients needed for an adequate diet, the handbook includes sections on planning nutritionally adequate and satisfying meals, estimating quantities of food for a nutritionally adequate diet, and keeping food cost records. Dietary allowances are listed in Appendix A, comparison of food groupings in Appendix B, a short method for computing nutritive values of diets in Appendix C, low and moderate cost food plans (per person, per week, and per day, plus the number of servings per person per week) in Appendix D, and a food purchasing guide in Appendix E. Three text tables and thirty-five appendix tables are included. Also a list of pertinent available government publications is presented at the end of the monograph. Tables of purchase information are indexed.

This publication should be of value to all osteopathic hospitals and sanatoriums, particularly those whose size and resources limit the number of their technical dietary staff members.

Conventions and Meetings

Announcements

American Osteopathic Association, Fifty-Sixth Annual Convention, Atlantic City, N. J., July 14-18, inclusive. Program Chairman, William B. Strong, Brooklyn.

American College of Osteopathic Obstetricians and Gynecologists, annual meeting, Hotel Statler, Detroit, February 8-15. Program Chairman, Lester Eisenberg, Upper Darby, Pa.

American Osteopathic College of Proctology: See American Osteopathic Society of Proctology.

American Osteopathic Society of Proctology, with American Osteopathic College of Proctology, Atlanta Biltmore Hotel, Atlanta, April 1-3. Program Chairman, George R. Norton, Fort Lauderdale, Fla.

Arizona, annual meeting, Hotel Westward Ho, Phoenix, May 16-18.

California, annual meeting, Hotel Del Coronado, Coronado Beach, May 5-9. Program Chairman, Edward Randel, Los Angeles.

Florida, annual meeting, Hotel Dixie Sherman, Panama City, May 16-18. Program Chairman, Ashley C. Lovejoy, Jacksonville.

Illinois, annual meeting, Chicago, April 25-27. Program Chairman, Ransom L. Dinges, Orangeville.

Indiana, annual meeting, Honeywell Memorial Center, Wabash, May 4-6. Program Chairman, Fred L. Swope, Richmond.

Iowa, annual meeting, Hotel Savery, Des Moines, May 19, 20. Program Chairman, Donald C. Giehm, Sioux City.

Kansas, annual meeting, Jayhawk Hotel, Topeka, April 26-30. Program Chairman, E. A. Rindt, Fredonia.

Maine, annual meeting, Hotel Samoset, Rockland, June 19-21.

Massachusetts, annual meeting, Hotel Kenmore, Boston, January 19, 20. Program Chairman, Laurence M. Blanke, Dedham.

North Dakota, annual meeting, Hotel Wahpeton, Wahpeton, May. Program Chairman, Erwin O. Smith, Wahpeton.

Northwest Osteopathic Convention, annual meeting, Chinook Hotel, Yakima, Washington, June 23-25. Program Chairman, Wilbert B. Saunders, Seattle.

Oregon: See Northwest Osteopathic Convention.

South Dakota, annual meeting, Marvin Hughitt Hotel, Huron, June 1-3. Program Chairman, C. Steele Betts, Huron.

Texas, annual meeting, Adolphus Hotel, Dallas, May 1-3. Program Chairman, A. L. Garrison, Port Arthur.

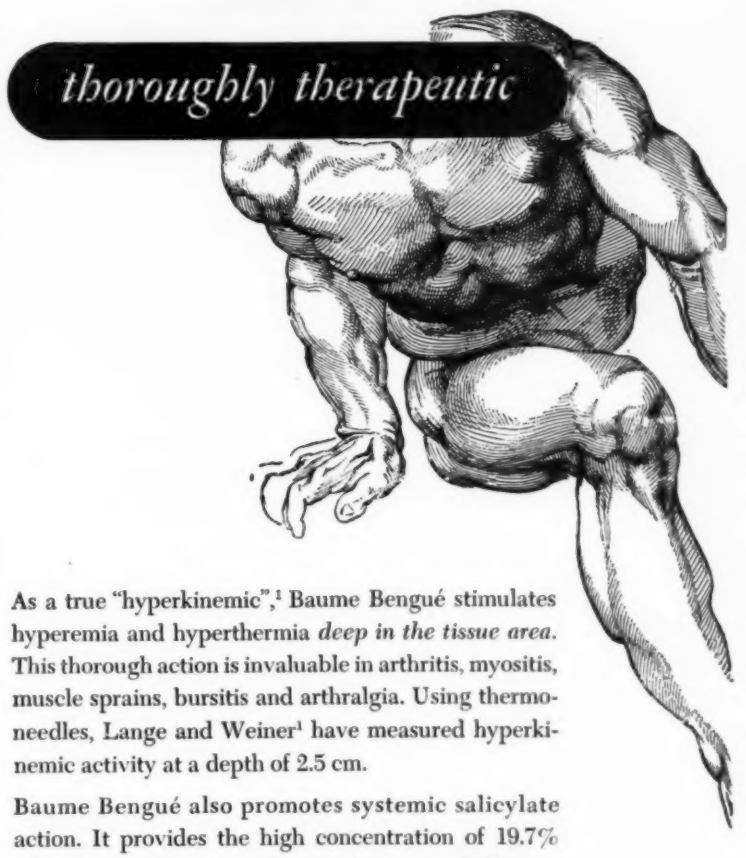
Vermont, annual meeting, October 1, 2. Program Chairman, Roy M. Sherburne, St. Johnsbury.

Virginia, annual meeting, The Lodge, Williamsburg, May 23, 24.

Washington, seminar, Gowman Hotel, Seattle, December. Program Chairman, H. F. Kale, Seattle. See also Northwest Osteopathic Convention.

West Virginia, annual meeting, Daniel Boone Hotel, Charleston, June 8-10. Program Chairman, Roland P. Sharp, Mullens.

Wisconsin, annual meeting, Hotel Schroeder, Milwaukee, May 6-8. Program Chairman, Ray J. Dennis, Milwaukee.



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1. Lange, K., and Weiner, D.: J. Invest. Dermat. 12:263 (May) 1949.

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OFFICIAL AND AFFILIATED ORGANIZATIONS

ARIZONA

State Society

In addition to the officers and committee chairmen listed in the July and November JOURNALS respectively, other committee chairmen are: Veterans affairs, Van H. Fossler, and hospitals, Vernon Pierce, both of Tucson.

CALIFORNIA

Fresno County

A meeting was held on September 11.

Monterey Peninsula

At the first meeting of the season, George Z. DuPont, Los Angeles, illus-

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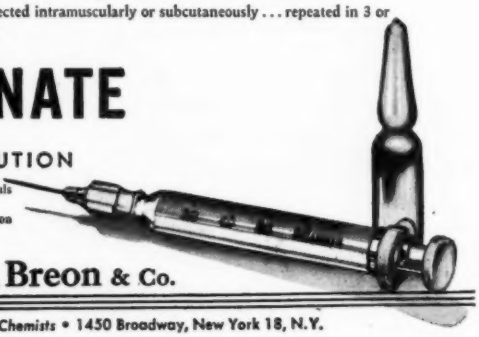

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trated with slides a talk on technics for correcting strabismus.

Redwood Empire

The first fall meeting was held on September 11.

Santa Barbara

A joint meeting was held with the Ventura County society on September 6. Munish Feinberg, Los Angeles, reported on the activities of the State Society and also the national convention.

Southside

David C. Long, Los Angeles, spoke on the office care of the proctological patient at the September 6 meeting. Statistical and financial features of the same problem were discussed by Harold J. Carter, also of Los Angeles.

West Los Angeles

The first fall meeting was held on September 11. A colored film, "Saddle Block and Caudal Anesthesia in Obstetrics," was shown and various aspects of anesthesia were considered by Glenn F. Gordon, Glendale.

Alfred J. Schramm, Los Angeles, reported on health insurance for the patient.

Los Angeles City

At the September 11 meeting Robert M. Loveland, Los Angeles, was elected to replace Crichton C. Brigham, also of Los Angeles, as president.

COLORADO

State Society

See Rocky Mountain Osteopathic Conference under Special and Specialty Groups.

DELAWARE

State Society

The officers were reported in the August JOURNAL.

Committee chairmen are: Membership, John C. Bradford; Osteopathic Progress Fund, public relations, and legislative, George F. Nason, Jr.; programs and meetings-educational, A. A. Golden; hospitals, Henry George; and examiner to Medical Council, Raymond H. Rickards, all of Wilmington.

Dr. Nason is the trustee at large.

FLORIDA

District Three

The officers are: President, William J. Furey, Jr., Eustis; vice president, J. Ross Bechtel, Orlando; and secretary-treasurer, Elizabeth F. Mochrie, Winter Park.

F. P. Maupai, Orlando, is a trustee.

District Seven

The officers are: President, Harold V. Pierce, Bradenton; vice president, Charles U. Gnau, Ft. Myers; and secretary-treasurer, William E. White, Jr., Bradenton.

W. S. Horn, Palmetto, is a trustee.

District Eight

The first fall meeting was held in Miami on October 2. Mr. M. E. Glasser spoke on "Complete Oxygen Therapy."

The next meeting was scheduled for November 4.

GEORGIA

State Society

The following program was presented at the Fall conference in Atlanta October 7: "Posture and its Effect on the Viscera" and "Painful Shoulders and the Upper Extremity" both by Angus G. Cathie, Philadelphia.

IDAHO

Boise Valley

The officers are: President, Andrew Johnson, Nampa; vice president, Leland J. Anderson; and secretary-treasurer, Betty Lou Crane, both of Boise.

At the October 18 meeting in Nampa, the motion picture, "Allergy," was shown.

ILLINOIS

District Five

A meeting was held in Rantoul on October 25. "Technics" was the subject discussed by William Wood and George F. Marjan, both of Chicago.

INDIANA

State Society

A get-acquainted meeting and seminar were to be held in South Bend on November 10, 11.

District One

James F. Gipe, Indianapolis, gave a talk on "Physiological Movements of the Spine," at the first meeting of the season on September 11.

The program announced for the meeting in Indianapolis on October 24 was a panel report by Paul van B. Allen, Herman E. Rinne, and Albert G. Dannin, all of Indianapolis, on the postgraduate course on cancer given at the state university.

District Three

At the September 19 meeting, Albert F. Kull, South Bend, spoke on "Office Diagnosis of Carcinoma."

District Four

During the meeting on September 20 in Mishawaka, Mr. Roy F. Jones, Manager of the Elkhart Credit Bureau and Better Business Bureau, explained "How the Credit Bureau Can Help the Professional Man."

The speaker, announced in advance, for the meeting October 18 was R. Wayne Baldridge, Chicago.

KANSAS

Arkansas Valley

In addition those reported in the November JOURNAL, committee chairmen are: Hospitals and legislation, B. L. Gleason; clinics, V. R. Cade; statistics, J. R. Stanfield; vocational guidance, John W. Morrow; public health, Ronald L. Brown, all of Larned; membership, C. E. Hammer, Dodge City; ethics, Frederick J. Farmer, Stafford; industrial and institutional service, Glen D. Jewett, St. John; and public relations, F. A. McEvoy, Wilson.

The October meeting was held in Larned. Thomas B. Powell, Larned, presented a paper on "Pectenosis and Pectenotomy."

Central

Grover N. Gillum and Dorsey A. Hoskins, both of Kansas City, presented a symposium on "Early Detection and Treatment of Cancer" at the September 12 meeting.

Mid-Kansas

The officers are: President, R. W. Burditt, Moundridge; vice president, John C. Slifer, Florence; and secretary-treasurer, M. B. Willems (re-elected), Hillsboro.

Dr. Willems and Dr. Slifer are also trustees.

Wyandotte County

The officers are: President, A. John Milazzo; vice president, W. A. Warren; and secretary-treasurer, Harold W. Bain (re-elected), all of Kansas City.

MASSACHUSETTS

Essex County

The following is the program announced in advance to be presented on November 13 in Lynn. Raymond W. Boyd and George P. Moore, both of Lynn, will give several case history studies of interest to all.

MINNESOTA

Minneapolis

The program for the November 7 meeting was to include a talk on "The Autonomic Nervous System and Its Practical Applications" by Carl E. Morrison, St. Cloud.

MISSOURI

State Society

The program planned for the annual convention in Kansas City November 3-7 was as follows: "Osteopathic Progress Fund," C. Robert Starks, Denver, and Mr. Lewis F. Chapman, Chicago; "The Rh Factor in Pregnancy" and "Cyanosis of the Newborn," Robert B. Bachman, Des Moines, Iowa; "Clinical Applications of Osteopathic Research," J. S. Denslow, Kirksville; "Congenital Deformities of the Newborn in Relations to Eye, Ear, Nose, and Throat" and "Glaucoma and Treatment," Harold M. Husted, Denver; "Abnormal Deliveries in the Obstetrical Patient" and "Prenatal Care in Obstetrics," Robert F. Haas, Dayton, Ohio; "Common Problems in Childhood," William C. Kelly, Kirksville; "Arthritis, Diagnostic Problems" and "Treatment of Arthritis," E. C. Andrews, Ottawa, Ill.; "Communicable Diseases," E. A. Belden, M.D., State Department Public Health and Welfare; "Tuberculosis," Herbert S. Miller, M.D.; "Environmental Sanitation Problems," Mr. L. E. Ordelheide, all of Jefferson City; "A New Test to Determine Brucella Antigens in the Blood," Alfred P. V. Auersterg, M.D.; "Brucellosis Controlled," Eugene Wise; "The Chronic Gallbladder," Charles A. Povlovich, all of Kansas City; "Rheumatic Heart Disease," F. V. Hetzler, Kirksville; "Medical Aspects of the Obstetrical Patient," John O. Carr, Marceline; "Diagnosis and Treatment of Low Backs —X-Ray Films," H. X. Tospon and William H. Voorheis, both of St. Joseph; and "Diagnosis of Urological Complications During Pregnancy," A. A. Choquette, Kansas City.

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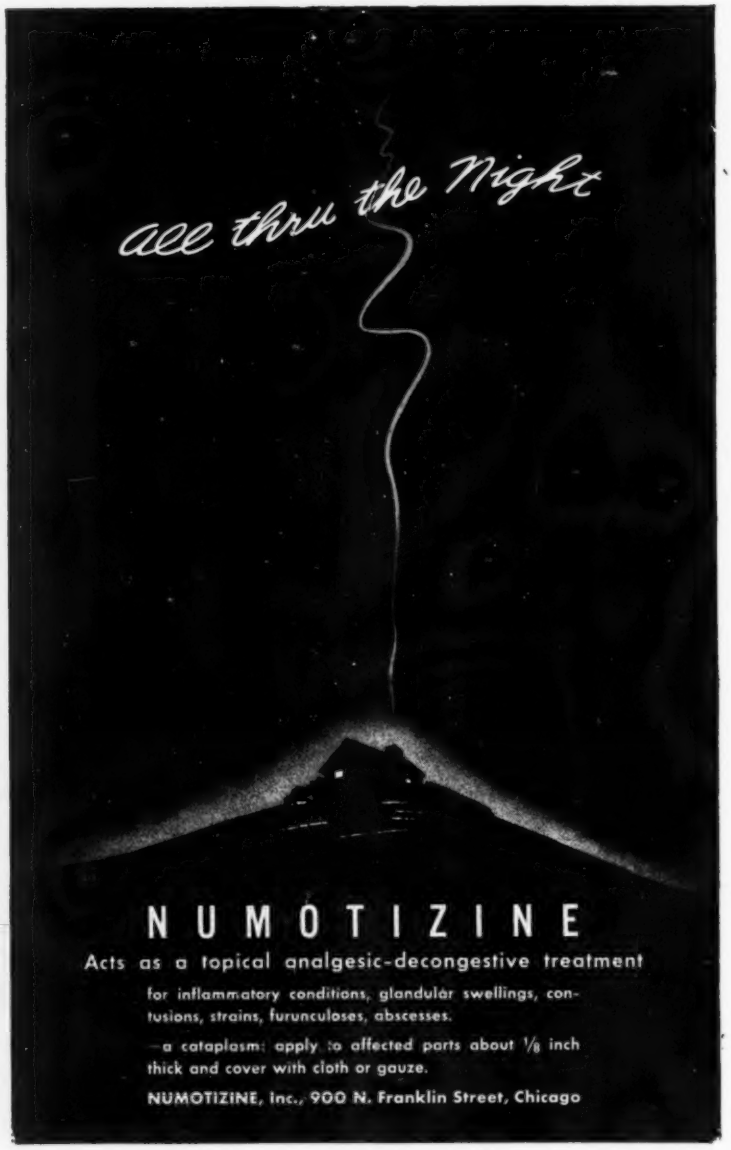
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Also planned was a symposium on x-ray: "Aims of the Missouri Osteopathic Society of Radiology," Dr. Voorheis; and "Flat Survey Films of the Abdomen," Wallace Gregory, Jefferson City.

Central

Some changes have been made in the roster which was incompletely reported in the November JOURNAL. The following roster is complete: President, Alvord N. MacRae, Warrentown; vice president, Ernest T. Swan, Perry; and secretary-treasurer, C. H. Thompson, New Florence.

Lloyd E. Hutchins, Fulton, will serve a term of 2 years as trustee.

Committee chairmen are: Membership, Ernest P. Hansen, Frankford; ethics, Wendell E. Borgesen, Wentzville; hospitals, Harold I. Nesheim; clinics, Keith D. Swan, both of Mexico; statistics, James R. Dougherty, Vandalia; district program, Allen Hill Van Arsdale, Montgomery City; legislation, D. A. Squires; vocational guidance and grievance, Dr. Hutchins, both of Fulton; public health, Walter E. Sparks, Columbia; industrial and institutional service, W. H. McCormick, Moberly; and public relations, Albert H. Domann, Auxvasse.

Central Ozark

The officers were reported in the October JOURNAL.

The trustees are Ralph O. DeWitt, Waynesville, and Steve C. Howard, Vienna.

Committee members are: Grievance, Warren M. Cottingham, Rolla, Donley Gates, Dixon, and Joseph R. Burnett, Salem; and program, Lewis G. Myers, Richland, Ray H. Schoenhals, Belle, and Ronald H. Scott, Bourbon.

Jackson County

The officers and trustees were reported in the June JOURNAL.

In addition to these, Paul H. Potter, Kansas City, is the president-elect.

North Central

The officers are: President, Derrel A. Bryan, Wheeling; president-elect, R. W. Matheny, Chillicothe; vice president, Joseph E. Prior, Milan; secretary, William H. Payne, Mendon; and treasurer, Gene T. Malone, Marceline.

A meeting was held in Chillicothe on September 20. Vernon H. Casner, Kirksville, spoke on "Rural Health."

Speakers at the meeting in Shelbina on October 11 were: Herman Still, Kirksville, who discussed the subject of skin diseases, symptoms and treatment; and Mr. Lewis F. Chapman, Chicago, who presented a talk entitled "Osteopathic Education, Past, Present, and Future."

Osage Valley

The officers are: President, Eldred S. Macauley, Jefferson City; vice president, Carleton E. Merrifield, Centertown; and secretary-treasurer, Archie D. Boucher (re-elected), Jefferson City.

Richard A. Michael, Jefferson City, will serve as trustee until 1954.

Committee chairmen are: Membership, Leon B. Lake; hospitals, Dr. Michael; clinics, Eugene E. Lake; statistics, James G. Miller; convention program and arrangements, Lawrence E. Giffen; public relations, Mr. Lawrence Luktewitte, all of Jefferson City; ethics, Charles F. Luebbert, Tipton; legislation, Robert E. Murrell, Eldon; vocational guidance, Kenneth Dale Atterberry, Camdenton; public health, Marshall E. Humphreys, Tuscumbia; and industrial and institutional service, W. R. Gregory, Jefferson City.

Southwest

Harold E. George, Mount Vernon, has been elected to serve as secretary-treasurer due to the resignation of William W. Forbes, Carterville. Warren M. Jones, Neosho, will continue the unexpired term as trustee in place of W. E. Heinlen, Joplin.

NEW JERSEY

Bergen-Passaic County

The speaker at the October meeting was Irwin Rhine, Englewood. His subject was "Preventing Infection in Pediatric Patients."

Fred C. Caverly, Passaic, spoke on "Rectal Disorders in General Practice" at the November meeting.

NEW MEXICO

State Society

The officers are: President, William D. Andrews; president-elect, P. E. Walley, both of Albuquerque; vice president, George Cozma, Vaughn; and secretary-treasurer, Robert E. Smith, Lovington.

The trustees are: H. E. Donovan, Raton; Kenneth E. Warren, Albuquerque; J. Paul Reynolds, Rosewell; Paul S. Jones (re-elected), Las Cruces; Lawrence C. Boatman (re-elected), Santa Fe; and Charles R. Catron, Gallup.

Mr. W. Peter McAtee, Albuquerque, is the legal counselor.

NEW YORK

State Society

The officers are: President, William S. Prescott (re-elected), Syracuse; vice president, Warren J. E. Tucker (re-elected), Port Washington; secretary, Robert E. Cole (re-elected), Geneva; and treasurer, Robert R. Ross, Syracuse.

The directors are: David J. Bachrach, New York City, Eugene J. Casey, Binghamton, C. E. Long, Jr., Buffalo, John R. Pike, Albany, and William B. Strong, Brooklyn. All of the directors were re-elected.

New York City

A meeting was held on October 17. Reports of several officers and committee chairmen were given.

Western

The officers and directors were reported in the July JOURNAL.

Committee chairmen are: Membership, Edwin R. Larter; ethics, Edith E. Dovesmith, both of Niagara Falls; hospitals and legislation, W. LaVerne Holcomb; vocational guidance, public health, and public relations, C. E. Long, Jr.; convention arrangements, Edgar R. Cofeld; convention program, Howard B. Herdeg, all of Buffalo; and clinics, Herman P. Zaehringer, Kenmore.

NORTH CAROLINA

State Society

The program presented at the annual convention in Asheville October 19, 20 was: "Present Day Status of Osteopathy," R. C. McCaughan, Chicago; "Services of the State Board of Health and the Local Health Department," John W. R. Norton, M.D., Raleigh, Secretary North Carolina State Board of Health; "Philosophy of Osteopathy," "Neuroendocrine System—Application in Practice," "The Rule of the Artery," and "The Knee—Pain and Disability," George W. Northup, Livingston, N. J.; and "Fascia—Functions and Relation to Body Mechanics," "Shoulder Pain and Disability," "Practical Application of Structural Examination," "The Cervicodorsal Region of the Spine—Examination and Treatment," and "Visceral Disturbances in Relation to Postural Change," Angus G. Cathie, Philadelphia.

OHIO

Second District (Sandusky)

Thet officers were listed in the August JOURNAL.

The trustees are: William C. Cozad, Clyde; and Ralph D. Ladd, Toledo.

The committee chairmen are: Membership, George O. Hoover, Oberlin; ethics, Forrest F. Yoder, Bellevue; hospitals, Carle W. F. Koehler, Sandusky; legislation, Dr. Cozad; vocational guidance, Loren D. Leidheiser, Huron; public health, Harold A. Sifling; public relations, Erwin R. Arnold; and program, John A. Brandon, all of Lorain.

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Third District (Cleveland)

The officers are: President, Jerry A. Zinni, Cleveland; president-elect, Wayne R. Broadwell, Lakewood; vice president, Theodore F. Classen; and secretary-treasurer, Stanley B. Koerner (re-lected), both of Cleveland.

The trustees are: Stephen A. Sheppard, Fairview; and J. W. Engel, Cleveland.

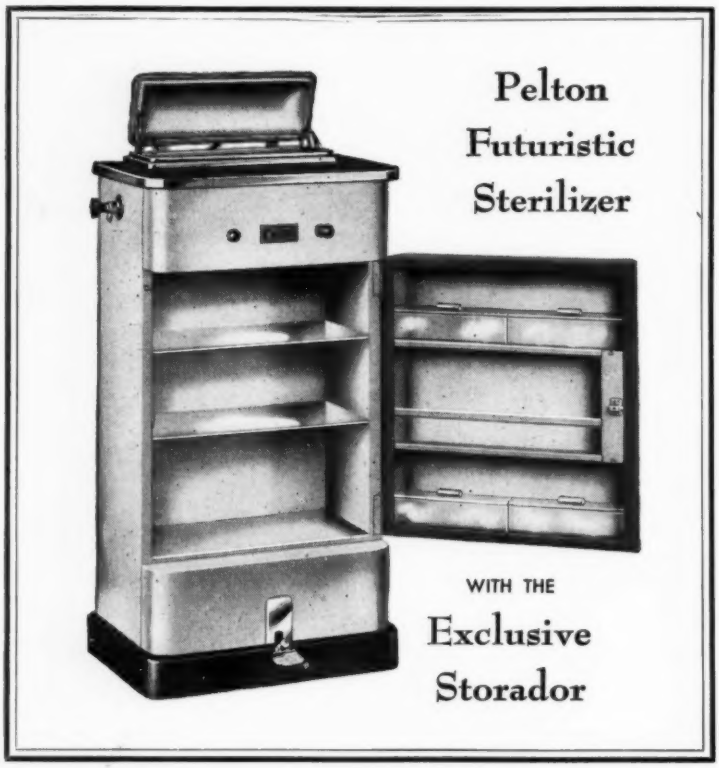
The committee chairmen are: Membership, Kerwin P. Purdum; convention program (postgraduate affairs), Dr. Classen; vocational guidance, Ralph W. Kelley; insurance, Leonard G. Greenbaum; physician location, Leonard C. Nagel, all of Cleveland; and hospitals, clinics, and public health, Dr. Sheppard.

Eighth District (Akron)

The officers are: President, Wesley V. Boudette; president-elect, James E. Dunham, both of Akron; vice president, John W. Lash, Barberton; and secretary-treasurer, Josephine Hay Brown, Wooster.

The trustees are: Lloyd Z. Kammer and Harold W. Nolf, both of Akron; and Donald J. Ulrich, Kent.

The committee chairmen are: Membership, Alma C. Webb; insurance, Dr. Nolf; legislation and allied professional council, Elmer E. Solt; public health and welfare, Dr. Kammer; physician



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location and public relations, Harold R. Hunter, all of Akron; postgraduate affairs and convention arrangements, Edward Brown, Wooster; and vocational guidance, Gerald M. Stevenson, Kent; and ethics, Charles L. Naylor, Ravenna.

Tenth District (Canton)

The officers are: President, Marie A. Keener; vice president, Edwin C. White (re-elected); and secretary-treasurer, G. E. Brooker, all of Canton.

The committee chairmen are: Membership, statistics, and public relations, Dr. Brooker; hospitals, Charlotte E. Weston; clinics, Joseph F. Rader; convention program and arrangements, P. H. Swezey, all of Massillon; ethics and legislation, John P. Flynn, Alliance; vocational guidance and insurance, Robert J. Swoger; and public health and welfare and industrial and institutional service, Dr. White, both of Canton.

OKLAHOMA

Central

William E. Pool, Lindsay, gave a talk on "Pathologies of the Chest" at the October 9 meeting in Oklahoma City. A film on cardiovascular technic was shown at the same meeting.

The next meeting was to be held on December 11 in Oklahoma City.

OREGON

State Society

The officers and a partial list of committee chairmen and trustees were reported in the August JOURNAL.

Additional trustees are: C. G. Peterson, Albany; and Gerald A. Dierdorff, Medford.

John L. Montgomery, Portland, and Joseph A. Cooney, Oswego, are co-chairmen of the public relations committee.

RHODE ISLAND

State Society

William L. Leet, M.D., Providence, spoke on "Pernicious Anemia" at the September 13 meeting.

The speaker at the October meeting was Herbert E. Harris, M.D., Providence. His subject was "Disk Conditions."

WEST VIRGINIA

State Society

The program planned for the refresher course in White Sulphur Springs November 5, 6 is: "Closed Head Injury," "Peripheral Nerve Injury," and "Modern Management of Cerebrovascular Accident," by Sam H. Sheppard, Cleveland; "An Evaluation of Present Day Methods of the Treatment of Arthritis," by B. R. Kinter, Bluefield; and "Prenatal and Postpartum Care," by Mervin E. Meck, Pineville.

Three films, "Osteopathic Mechanics—Pelvic Area," "Osteopathic Mechanics—Dorsal Area," and "Athletic Injuries," were to be shown.

Parkersburg

The monthly meeting was held in Parkersburg on October 11.

WISCONSIN

State Society

The program planned for the midyear meeting in Madison November 6-8 was: "Diagnosis and Management of Common Gastrointestinal Problems," Ward E. Perrin, Chicago; "Specific Technics," Ronald D. Walling, Baraboo, and Edward M. Keller, Beaver Dam; and "Poliomyelitis," Toivo John Aho, Milwaukee.

Fox River Valley

Lewis B. Harned, Madison, was to be the speaker at the meeting in Manitowoc on October 11.

Madison

At the October 18 meeting in Madison, H. Ward Ferrill, Chicago, presented a paper on "ACTH—Cortisone, Actions, Uses, and Dangers."

The next district meeting is planned for January 17 in Madison.

Milwaukee

A meeting was to be held on October 4 in Milwaukee. Edward M. Keller, Beaver Dam, was to give a report on the A.O.A. House of Delegates.

CANADA

Canadian Osteopathic Association

The officers are: President, Walter Kurth, Winnipeg, Manitoba; president-elect, Norman W. Routledge, Chatham, Ontario; past president, C. V. Hinsperger, Windsor, Ontario; vice president, Douglas E. Firth, Toronto; and secretary-treasurer, Miss Joyce S. Currie, Montreal.

Members of the board of directors are: J. T. Atkinson, Milton R. Thorpe, both of Vancouver; Frederick H. Deeks, Winnipeg, Manitoba; J. M. McLeod, Moncton, New Brunswick; Donald A.

Jaquith, Toronto; Bruce E. Marshall, Montreal; and Doris M. Tanner, Regina, Saskatchewan.

Committee chairmen are: Professional affairs, Dr. Deeks; professional education and program material, R. Brown Irvin, Galt, Ontario; ethics and censorship, J. J. O'Connor; membership, Frederick G. Marshall; provincial affairs, D. Gordon A. Campbell, all of Toronto; professional opportunity, M. Paul Christianson; clinical study, Melvin E. Moyer; vocational guidance, R. H. Wettlaufer, all of Hamilton, Ontario; convention, J. Edward Wilson, Barrie, Ontario; public affairs, Dr. Jaquith; health insurance, Ray A. Linnen; public relations, J. I. St. Clair Parsons, both of Ottawa; and rehabilitation, George R. Church, Orillia, Ontario.

Members of the executive committee are: Drs. Kurth, Routledge, Hinsperger, Firth, and Parsons.

SPECIAL AND SPECIALTY GROUPS

AMERICAN COLLEGE OF OSTEOPATHIC INTERNISTS

The program presented at the annual conference October 29 through November 1 in Des Moines, Iowa, was: "Rehabilitation of the Hemiplegic," David W. Hamilton, Titusville, Pa.; "Cardiac Catheterization and Angiocardiography," William D. Long; "Preoperative and Postoperative Management" and "Diabetes and Related Hyperglycemic States," Paul B. McCracken; "Preservation of Fluid Balance," Maxwell R. Brothers; "Cardiac Management of the Surgical Patient," Basil Harris, all of Los Angeles; "The Kidney—A Surgical Risk," Glennard Lahrson, Oakland, Calif.; "Hepatic Insufficiency and Its Support," Richard A. Schaub, Pasadena, Calif.; "Cardiac Arrhythmias As Recognized by Physical Examination," Sydney F. Ellias, Detroit; "Treatment of Cardiac Arrhythmias," D. Leonard Vigderman, Forrest Hills, N. Y.; "Preliminary Report on Vitamin B_{12}," Ace L. Pettigrew; "Pulmonary Diseases," Orville Hastings, both of Long Beach, Calif.; "Functional Disturbances of Gastrointestinal Tract," Ward E. Perrin, Chicago; "Recognition and Management of Sodium Depletion," Neil R. Kitchen, Highland Park, Mich.; "Basic Concepts in Pathologic Physiology," Leonard Grumbach, Ph.D., Des Moines, Iowa.

There was also a symposium, "The Cardiac Patient," including the following: "Nervous Regulation of the Heart," Dr. Grumbach; "Hypertension," Joseph R. McNerney, West Des Moines, Iowa; "Fads and Foibles in Cardiac Therapy," Stuart F. Harkness; and "Psychosomatic Aspects of Heart Disease," Ralph I. McRae, both of Des Moines, Iowa.

AMERICAN COLLEGE OF OSTEOPATHIC PEDIATRICIANS
Region III

A meeting was to be held December 3, 4 at Des Moines, Iowa.

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Aqueous base Vi-Chloro-Mint mixes thoroughly...carries its ingredients into complete suspension.
An oil base nasal spray will form a coating on the surface of nasal mucous membrane—clog and impede their normal work.
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CALIFORNIA ASSOCIATION OF INDUSTRIAL PHYSICIANS AND SURGEONS

The officers are: President, William F. Eschrich, Burbank; vice president, James A. Bird, South Gate; and secretary-treasurer, Richard S. Butler, Manhattan Beach.

ROCKY MOUNTAIN OSTEOPATHIC CONFERENCE

The program for the conference which was to be held November 9-11 is: "Physiopathologic Changes of the Female Breast," "Pathologic Features of the Cervix Uteri," "Physiologic and Pathologic Changes of the Uterus," and "Physiologic and Pathologic Alterations of the Ovary," Robert Morhardt, Pasadena, Calif.; "The Use and Abuse of Lumbar Puncture," "The Differential Diagnosis of Coma," "What the General Practitioner Should Know About Head Injuries," "Cerebral Arteriosclerosis and the Small Stroke Syndrome," "A Practical Approach of Neurological Diagnosis and Examination," and "The Diagnosis of Peripheral Nerve Injuries in the Upper Extremities," Randall J. Chapman, Burbank, Calif.; "The Roentgen Evaluation of Pulmonary Pathologies" and "Unusual Radiographic Cases," Clyde C. Henry, Denver; "Modern Medicine" and "Osteopathic Diagnosis," A. Hollis Wolf, Colorado Springs, Colo.; and an address by Floyd F. Peckham, Chicago.

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1. Behrman, H. T., Combes, F. C., Bobroff, A., Leviticus, R.: Ind. Med. & Surg. 18:512, 1949.
2. Turell, R.: New York St. J.M. 50:2282, 1950.
3. Heimer, C. B., Grayzel, H. G., and Kramer B.: Archives Pediat. 68:382, 1951.

State and National Boards

ARIZONA

Basic science examinations March 18 at the University of Arizona, Tucson. Applications must be completed by March 4. Address Herbert D. Rhodes, Ph.D., secretary-treasurer, Basic Science Board, Science Hall, University of Arizona, Tucson.

CALIFORNIA

Officers of the Board of Osteopathic Examiners are: President, Wesley H. Taylor, Redwood City; vice president, Eugene C. Darnall, Berkeley; and secretary-treasurer, Glen D. Cayler, Sacramento. Their terms will expire in 1952.

COLORADO

Professional examinations January 8 in Denver. Applications must be filed 30 days prior. Address Miss Beulah H. Hudgens, executive secretary, Board of Medical Examiners, 831 Republic Bldg., Denver 2.

Basic science examinations in March in Denver. Address Esther B. Starks, D.O., secretary, Basic Science Board, 1459 Ogden St., Denver 3.

CONNECTICUT

Professional examinations March 4. Address H. Wesley Gorham, D.O., secretary, Osteopathic Examining Board, 520 West Ave., Norwalk.

Basic science examinations February 9 at Yale University, New Haven. Applications must be filed by January 26. Address Miss M. G. Reynolds, executive assistant, State Board of Healing Arts, 110 Whitney Ave., New Haven 10.

DELAWARE

Examinations in January. Address Joseph McDaniel, M.D., secretary, Board of Medical Examiners, 229 South State St., Dover.

HAWAII

Examinations in January. Address Mabel A. Runyan, D.O., secretary, Board of Osteopathic Examiners, 2333 C. Kalakaua Avenue, Honolulu 30.

ILLINOIS

Examinations in January. Applications must be filed 1 week before examination date. Address Mr. Charles F. Kervin, Superintendent of Registration, Illinois Department of Registration and Education, State House, Springfield.

IOWA

Basic science examinations January 8 in Des Moines. Address Ben H. Peterson, Ph.D., secretary, Board of Basic Science Examiners, Coe College, Cedar Rapids.

W. S. Edmund, Des Moines, has been reappointed to the Board of Osteopathic Examiners to serve until July 1, 1954.

KANSAS

Examinations February 21-23 at the Garlinghouse Bldg., Topeka. Applications must be filed 30 days in advance. Address Forrest H. Kendall, D.O., secretary, Board of Osteopathic Examination and Registration, 420½ Pennsylvania, Holton.

MAINE

Albert E. Chittenden, Auburn, and G. F. Noel, Dover-Foxcroft, have been reappointed to continue their offices of the Board of Osteopathic Examination and Registration until September and March 1956 respectively.

MASSACHUSETTS

Examinations March 11. Address George L. Schadt, M.D., secretary, Board of Registration in Medicine, State House, Boston 33.

MICHIGAN

Basic science examinations January 11, 12 at University of Michigan, Ann Arbor, and Wayne University, Detroit. Applications must be filed by January 1. Address Miss Eloise LeBeau, secretary-treasurer, State Board of Examiners in the Basic Sciences, 101 North Walnut St., Lansing.

MINNESOTA

Professional examinations March 11. Address George F. Miller, D.O., Secretary, State Board of Osteopathic Examiners, 601 Dayton Ave., St. Paul 2.

Basic science examinations in January at Millard Hall, University of Minnesota, Minneapolis. Applications must be filed by December 10. Address Raymond N. Bieter, M.D., 105 Millard Hall, University of Minnesota, Minneapolis 14.

MONTANA

Examinations March 4. Applications must be filed in advance. Address Asa Willard, D.O., secretary, Board of Osteopathic Examiners, Wilma Bldg., Missoula.

NEBRASKA

Basic science examinations January 8, 9 at the University of Nebraska College

of Medicine, Omaha. Applications must be filed 15 days prior to the examination. Address Mr. Husted K. Watson, director, Bureau of Examining Boards, Room 1009, State Capitol Bldg., Lincoln 9.

NEVADA

Examinations January 8. Address Walter J. Walker, D.O., secretary-treasurer, Board of Osteopathic Examiners, 210 West Second Street, Reno.

Officers of the Board are: President, Walter L. White, Reno; vice president, John Pasek, Minden; and secretary-treasurer, Walter J. Walker, Reno. Their terms will expire in January 1952.

NEW HAMPSHIRE

Examinations March 13, 14 in Concord. Address John S. Wheeler, M.D., secretary, Board of Registration in Medicine, State House, Concord.

NEW MEXICO

Basic science examinations March 16 at the State Capitol Bldg., Santa Fe. Applications must be filed in advance. Address Mrs. Marguerite Cantrell, secretary, Board of Examiners in the Basic Sciences, P. O. Box 1522, Santa Fe.

NEW YORK

Examinations February 5-8 in New York City, Syracuse, Buffalo, and Albany. Applications must be completed 30 days in advance. Address Jacob L. Lochner, Jr., M. D., secretary, Bureau of Professional Education, 23 South Pearl St., Albany 7.

NORTH DAKOTA

Examinations January 8. Address Gordon L. Hamilton, secretary-treasurer, State Board of Osteopathic Examiners, Ringo Bldg., 119 South Main St., Minot.

Dr. Hamilton has been reappointed to the Board to serve until June 30, 1954.

OREGON

Professional examinations January 3-5 at the University of Oregon Medical School, Portland. Applications must be filed by December 14. Address Mr. Howard I. Bobbitt, executive secretary, Board of Medical Examiners, 609 Failing Bldg., Portland 4.

Basic science examinations in March. Applications must be filed in advance. Address Charles D. Byrne, Ph.D., secretary, State Board of Higher Education, Eugene.

PUERTO RICO

Examinations in March at San Juan. Applications must be filed 3 months in advance. Address Mr. Luis Cueto Coll, secretary, Board of Medical Examiners, Box 3717, Santurce.

SOUTH CAROLINA

Hallie H. Stubblefield, Greenville, has been reappointed to serve as a member of the Board of Osteopathic Examiners until May 1954.

TENNESSEE

Examinations are held on the second Wednesday in February and the last Wednesday in July at Nashville. Address M. E. Coy, D.O., secretary, Board of Examination and Registration for Osteopathic Physicians, 1226 Highland Ave., Jackson.

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1 Bowman, F. B., *The Care of the Permanent Colostomy*, Can. Med. Assoc. Jr., 60: 71-72 (Jan.) 1949.

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L. D. Cheesemore, Paris, and M. E. Coy, Jackson, have been re-elected as president and secretary-treasurer respectively of the Board of Examination and Registration for Osteopathic Physicians. They will serve until June 1952. Walter Baker, Memphis, has been reappointed to serve as member of the same Board until May 1954.

VERMONT

Examinations January 16, 17 at the office of H. I. Slocum, Middlebury. Applications must be filed by January 1. Address Charles D. Beale, D.O., secretary, Board of Osteopathic Examination and Registration, Mead Bldg., Rutland.

WASHINGTON

Professional and basic science examinations in January. Applications must be filed 30 days in advance. Address Mr. Robert L. Smith, director, State Department of Licenses, Professional Division, Olympia.

WISCONSIN

Examinations January 8 at Madison. Address Alvin G. Koehler, M.D., secretary, Board of Medical Examiners, 46 Washington Blvd., Oshkosh.

WYOMING

Examinations February 4, 5 in Cheyenne. Address Franklin D. Yoder, M.D., secretary, State Board of Medical Examiners, State Capitol, Cheyenne.

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Examinations in Part I consist of anatomy, including histology and embryology; physiology; physiological chemistry; general pathology; and bacteriology, including parasitology and immunology.

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RHEUMATIC FEVER AND THE CHILD'S EMOTIONS*

Betty Huse, M.D.

Rheumatic fever, like any other serious or long-drawn-out illness, is sure to have some effect on a child's emotional development. It affects this development differently in different children. What it does to a child depends on what his experience with the illness means to that particular child.

Of course, the child's experience with rheumatic fever will depend partly on how severe his attack is, what his symptoms are, how long he is sick, and what methods of treatment are used. Rheumatic fever may attack the child's joints, his nervous system, his skin, or his heart. The severity of the disease varies, too. One child may have a high fever and painfully swollen joints. Another may have pains in the joints so mild that he goes about his usual activities without realizing that he is sick. The child is usually sick with rheumatic fever for a long time—often for many months.

WHAT IS HIS EMOTIONAL BACKGROUND?

But the child's experience will depend in large part on what kind of child he is and on what has happened to him in the past. It will depend on the kind of body and mind he was born with; on how old he is when he gets rheumatic fever; on his relationships with his father and mother; on how he gets along with his brothers and sisters and other children; on his previous experiences, good and bad; and on his general pattern of coping with his problems. And, because a child is so much influenced by his parents, it will depend too on how the parents feel about the disease.

What are some of the factors in rheumatic fever that are likely to affect the emotional development of a child who is attacked by this disease?

*Reprinted from *The Child*, August-September, 1951.

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Since few children under the age of 3 years get rheumatic fever, we must realize that as a rule the child who does get it has already developed some of his fundamental emotional structure. But much of his development is still to come, and the disease may retard or distort it.

Death is a real possibility in rheumatic fever, either early in the acute stage, or at some future time if the disease gets worse. A young child may not have a clear idea of this, but he may reflect the fear shown by his father and mother. Older children more often than we imagine become aware of this possibility through what they overhear and guess, and they may be very frightened. A frightened child may even convince himself that he is not sick and refuse to do the things that would help him get better.

A sick child, like any other sick person, tends to go back, at least temporarily, to his earlier ways of behaving. Some of the child's earlier patterns of behavior, such as bed-wetting, thumb-sucking, babyish eating habits, and depending too much on his mother, may worry his parents. And often the more the parents worry, the more babyish the child gets. If his babyhood or early childhood gave him more satisfaction than his present time of life, or if he had problems earlier in life that were never quite solved, it may be hard for him to get back to acting his age. Sometimes, on the other hand, a successful encounter with an illness seems to lead to a real spurt in emotional development.

Often a child does not understand the real purpose of a medical procedure, and attributes to it a purpose that is connected with his own imagination and inner life rather than with reality. Blood transfusions, blood-pressure recording, needles, taking of rectal temperatures, oxygen tents, X-rays, fluoroscopes, and so forth, may be interpreted in bizarre ways. The child may think that people really want to injure him, or that he has earned this treatment as punishment.

In the early stage of the disease the child is almost completely dependent on his mother or a nurse. He is fed, put on a bedpan, given a bath in bed, lifted from one position to another. This physical dependency may be unwelcome to some children, welcome to others. One child may deal with it by outright rebellion; another may enjoy it and not want to give it up.

Often a child with rheumatic fever must be taken from his home to a hospital or a convalescent home. Separation from the parents may be a great shock for the preschool child, and the effect of this shock may seriously interfere with his ability to form emotional relationships with people later in life. It is usually less serious for the child from about 6 years to the beginning of adolescence, but may still be very hard for some children. For an adolescent, separation from his parents may stir up latent emotional conflicts having to do with the adolescent's attempt to become more independent of his parents.

The child with rheumatic fever may at some point in his treatment be separated from other children of his own age. If this separation lasts a long time, as it may, the school-age child may be slowed up in developing relationships with other youngsters of his age. The adolescent may suffer acutely since he depends so much on others of his own age in his struggle for independence, for recognition as an adult man or woman, and for a firm set of values for himself.

When a little child, 3 to 6 years of age, is obliged to stay quiet in bed, he is kept from his natural ways of blowing off steam.

For the older child such restriction keeps him from playing with his friends. And it may mean interference with types of play that are important to his emotional development. It may also mean interference with schooling, which is so important as a way of learning to understand and deal with reality. It may interfere with creative activities, such as art and music, and thus interfere with a good method of dealing with emotional problems.

It is true that the heart is generally affected in rheumatic fever, and that actual infection of the heart may cause heart failure and even death during an acute attack. However, the scarring of the heart known as rheumatic heart disease, which may remain after the acute

attack has passed, should not as a rule interfere with the child's life, though an occasional child is left with handicapping heart disease. Even though fear of handicapping heart disease is usually unfounded, many parents, and even the children themselves, are worried and afraid about the future. A young child may reflect his parents' fears, but an older child or an adolescent may himself be frightened about what may happen to him. The adolescent may have real worries about the possible effect of his heart disease on his prospects for earning his living and for marriage and having children.

MOTHER AND FATHER WORRY, TOO

The reaction of the mother and father to the illness of their child may be very complex. There will usually be real fear; there may also be anxiety related to the parents' own emotional reactions to the idea of illness and possible death. The parents may feel guilty for a variety of reasons. They may blame themselves on the ground that the child may have inherited the disease; or they may feel that they have given the child inadequate care before the illness. (Either of these ideas may have been suggested to them by neighbors or by something they have read.) Or they may without knowing it blame themselves for hostile thoughts they have had about the child from time to time or for past deeds they have on their conscience.

At the beginning of the illness the mother will usually throw herself into the care of the child at a pitch that she cannot possibly keep up as the disease drags on. The dependency of the child and the needs for restricting his activity may be welcome to the parents, or it may be almost unbearable to them. The time and attention that the mother gives the child, and her attitude toward him, may create conflicts between the parents.

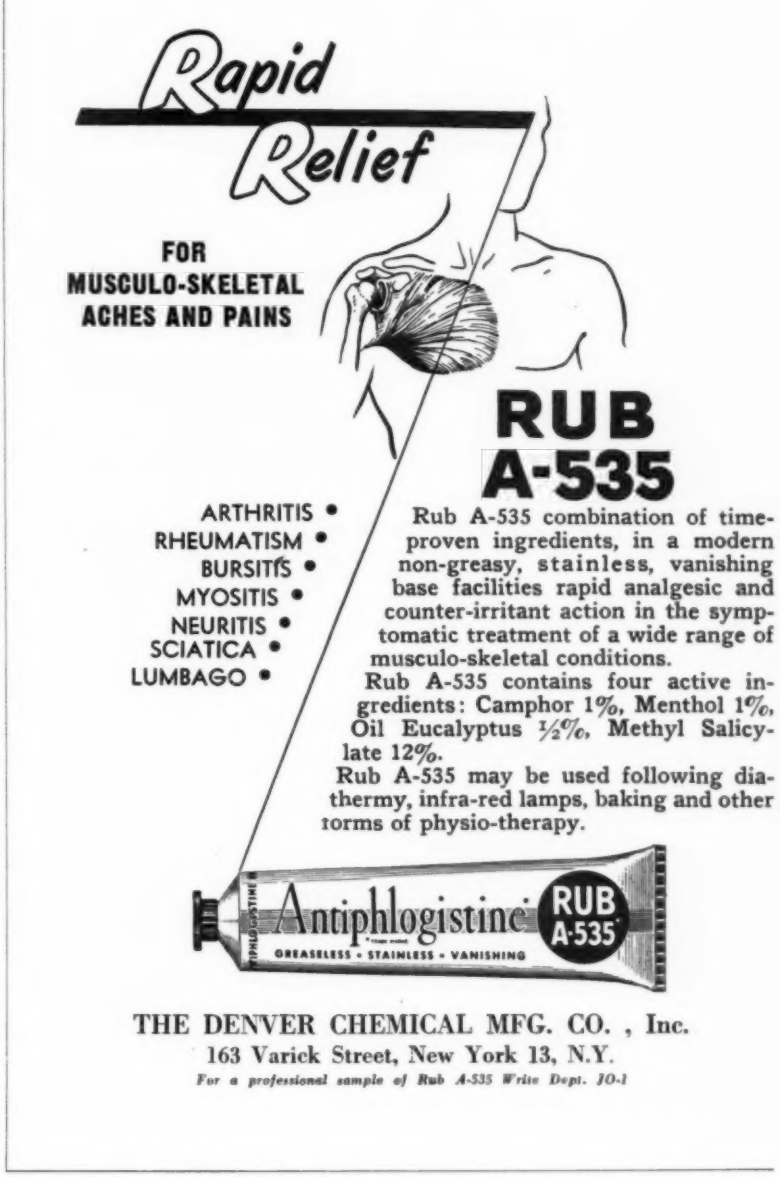
All these reactions of the parents will be bound to affect the parent-child relationship one way or another, and thus may affect the child's emotional development profoundly, especially if the child is young.

As rheumatic fever affects each child in an individual way, so the method for dealing with the emotional effects of the disease must also be individualized, and based on understanding of the meaning of the experience to the individual child. The only thing that could help everyone would be a sure, fast cure of the disease.

Meanwhile, however, something can be done in relation to the child, his parents, and the personnel involved in treatment:

1. For the child—It is important that attention be given at every step to his potential emotional problems. It will help if the child is given an opportunity to talk about his fears and his angry feelings and to tell as much as he can about how he feels about his illness. Allowing him to take some active part in managing the situation is usually helpful. The small child may be given a chance to choose, for example, whether he gets his medicine straight or in applesauce, and to make similar decisions within the limits of the medical treatment that is required; an older child may be given some responsibility for more important decisions. Although the child may be expected to act younger than his age at the beginning of his illness he should be helped to return to more grown-up ways as soon as this is feasible, by encouraging him to take increasing responsibility. If he is restricted in his physical activity, the limits of these restrictions should be made very clear to him. He should be treated consistently. He should be prepared for new experiences insofar as possible by clear and true explanations. He should be given opportunities for play, schooling, and creative activities consistent with his physical condition, his age, and his interests. Separation of the child from his parents should be regarded as a serious step; and the decision to send a young child to a hospital or convalescent home should be made only if treatment in his home is impossible. An adolescent, on the other hand, may be able to get through his illness and convalescence better when he is cared for with a group of others of about his own age.

2. For the parents, too, much can be done. They should have opportunities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for a careful and realistic discussion of the medical situation and the probable outcome of the illness. They should be encouraged to talk about their worries. They should be helped to see whether they are being unnecessarily indulgent or strict. And they should be helped to understand what their child is feeling and what he is worrying about, and how they can best give him support in this difficult situation.

3. The personnel involved in the treatment of the child can help greatly if they do their utmost to be consistent; if they can accept hostile or fearful attitudes on the part of the child or of his parents; if they consider every procedure in the light of the emotional as well as the physical effects and if they minimize emotional hazards by explaining the procedures to the child so far as is feasible, by eliminating unnecessary procedures, and by providing substitute outlets for his feelings when possible; if they watch the child's emotional condition in relation to his age and previous level of development; if they are as definite as possible about restrictions and drop them as soon as it is medically safe to do so; if they consider the child's emotional as well as his physical needs in planning for a period of separation from his parents; if they discuss his emotional problems with a psychiatric consultant and request consultation when this is needed.

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Hammer, Milton C., from 18 W. 22nd St., to 3030 E. Tenth St., Indianapolis 1, Ind.
Hardin, Rollo C., from Welch, W. Va., to 2308 Avenue T., Lubbock, Texas
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Hawes, Charles M., from Richardson, Texas, to Detroit Osteopathic Hospital, 12523 Third Ave., Detroit 3, Mich.
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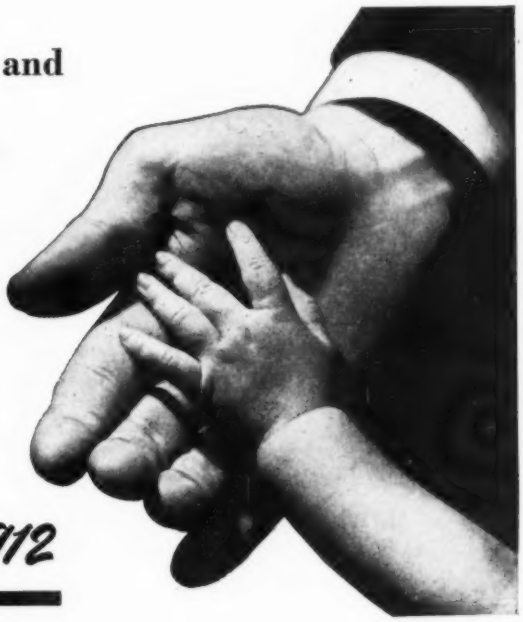

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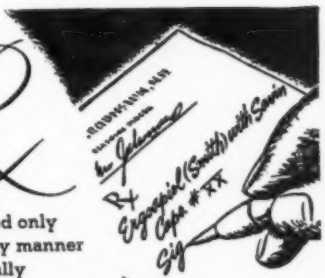

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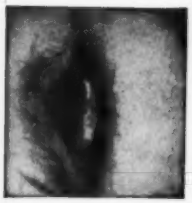

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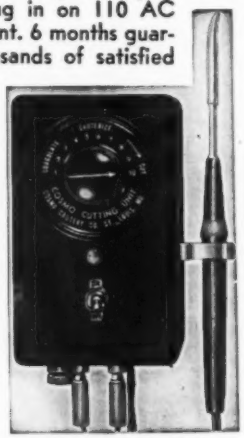

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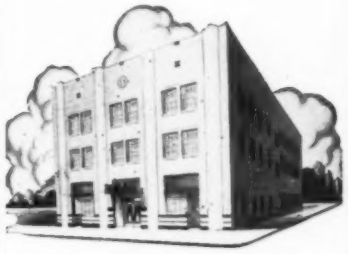

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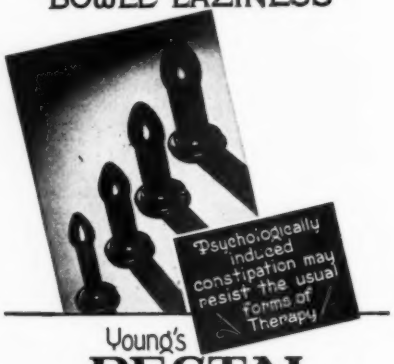

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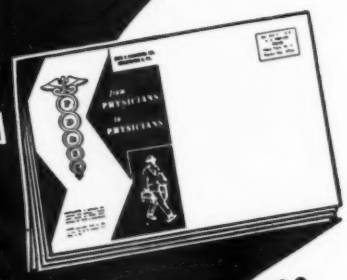

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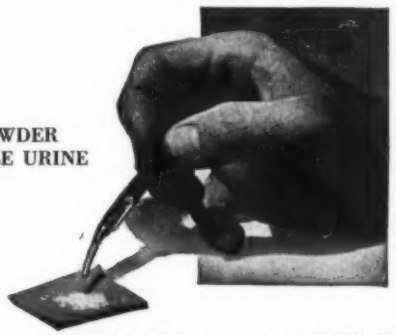

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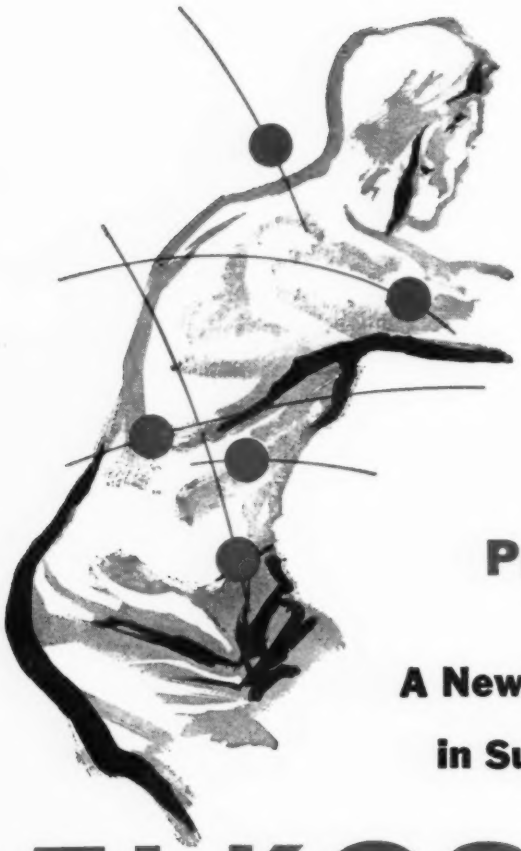

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